TECHNOLOGY DEPT

Fleet Owner

First Copy

evoted to the better operation and maintenance of all automotive fleets

VOLUME 26 MAY, 1941 No. 5

First Copy

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MAY 1941

First Choice of the "PROS"

look to the "pro"—the man who makes his
n any line—for the soundest advice. In the
eld, the "pro" is the transport operator.
enny of his profit comes directly from the
n of his trucks as they roll mile after mile
oad!

hy White developed *Super Power* for the
t operator first . . . knowing that if it
eet this Number One Challenge to trucks,
d be a better, bigger money earning truck
r business.

Today, Super Power Whites are known as "the first choice of the pros." The leading operators in the business (names on request) have found they earn $1200 and more per truck per year!

There is a complete line of Super Power Whites, for every business, in all capacities from 1½ to 10 tons.

THE WHITE MOTOR COMPANY, CLEVELAND

Builders of the complete line of White Super Power Trucks, City and Inter-city Coaches, Safety School Busses and the famous White Horse.

White

R 40 YEARS THE GREATEST NAME IN TRUCKS

EVEN MODERN BUS FLEETS CAN PROFIT BY USING THIS AUTOMOTIVE ENGINEERING SERVICE . . .

The bus pictured below is far from being old. It's typical of the equipment operated by a Minnesota bus line. And the help which this operator received in solving his problems is typical of the service Standard Oil Engineers have for any operator.

In this case, the Engineer was asked to locate the cause of troublesome engine deposits. At the same time he carefully checked other engine conditions. Modern testing equipment enabled him to make a complete and accurate analysis.

When he finished working with this maintenance department, not only had the deposit trouble been eliminated, but fleet gasoline mileage had been increased from 10.2 to 11.2 miles per gallon.

Why not have one of these Engineers explain to you just how he works and what he does to make these savings? You'll not be obligated in any way.

CONTRACTOR AWARDED FREEDOM FROM WHEEL BEARING TROUBLE

Gasoline mileage is a big item in fleet operation, but Standard Oil Automotive Engineers find many other ways of saving fleet operators money. One of these Engineers noticed that a Minnesota contractor was replacing front wheel bearings frequently in trucks and road machines. In analyzing this job the Engineer found that heat, transmitted from the brakes, was thinning out the grease in use. He recommended a test of the right grade of Standard Wheel Bearing Grease. The test showed that this grease eliminated bearing failures and also considerable expense in brake relining caused by grease leaking onto the brake drums.

One of these Engineers may have many cost-saving suggestions to offer you, if you'll let him.

HERE IS ONE SAFE WAY TO REDUC FLEET FUEL COSTS

Even a fraction of a cent difference in the *price* of gasoline is int esting to most fleet operators. But there is always a gamble quality when buying on price alone. And why gamble when th is one *safe* way to get lower gasoline costs?

Here's all you have to do. Let an Automotive Engineer "put" right grade of Standard Oil gasoline on your trucks. That does mean just filling the gas tank. He'll check your equipment and h your maintenance men adjust it to get full power and econo from the fuel he recommends. He will help locate engine inefficienc

This service on a fleet of eighteen trucks in an Evansville f reduced gasoline consumption 18%. That meant a saving equ alent to almost 2c per gallon in this fleet's gasoline bill.

You can get this same service. And at no cost to you. Just the local Standard Oil (Indiana) office, or write 910 South Michi Ave., Chicago, Illinois for the Engineer nearest you. In Nebras write Standard Oil Company of Nebraska at Omaha.

HERE'S WHERE YOU'LL FIND A STANDARD OIL AUTOMOTIVE ENGINEE

Chicago, Illinois	Des Moines, Iowa	Mankato, Minneso
Decatur, Illinois	Mason City, Iowa	Minneapolis, Mi
Joliet, Illinois	Detroit, Michigan	Green Bay, Wisco
Peoria, Illinois	Grand Rapids, Michigan	LaCrosse, Wiscon
Quincy, Illinois	Saginaw, Michigan	Milwaukee, Wisc
Evansville, Indiana	Kansas City, Missouri	Billings, Montana
Indianapolis, Indiana	St. Louis, Missouri	Denver, Colorado
South Bend, Indiana	St. Joseph, Missouri	Fargo, North Dako
Davenport, Iowa	Duluth, Minnesota	Huron, South Dako

Copr. 1941, Standard Oil Co. (I

STANDARD OIL COMPANY (INDIANA

LUBRICATION ENGINEERING *THE RIGHT LUBRICANT • PROPERLY APPLIE TO REDUCE COSTS*

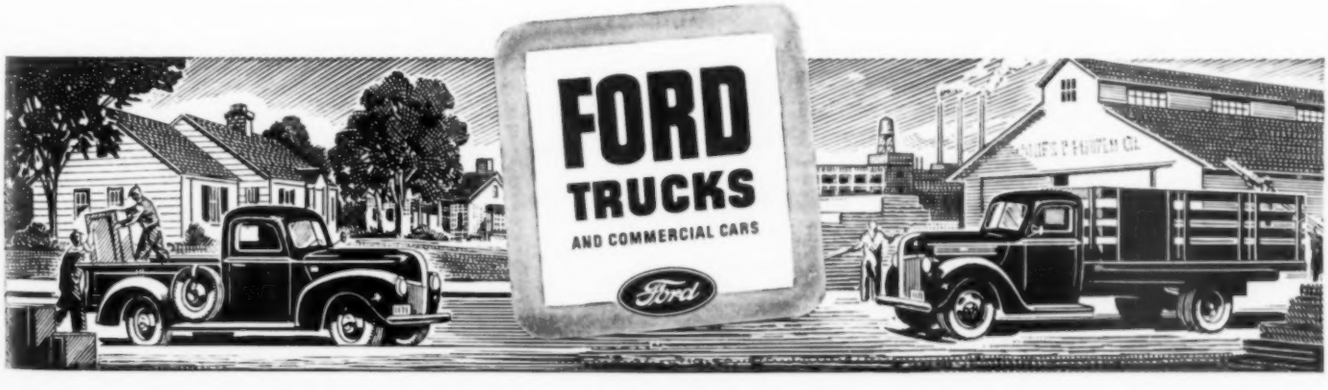
Need Plenty of Power?

PICK A FORD TRUCK

POWER TO CLIMB grades faster with full loads . . . power to move heavy loads easily . . . power for fast acceleration in city traffic . . . power for sustained high speeds on the open road! *Power to spare* is one more big reason why Ford Trucks are picked for America's tough jobs!

Ford *power* is combined with *economy*, because the high torque of the Ford V-8 engine is developed over a wide range of speeds.

Find out how Ford power, economy and rugged construction can serve *your* business, by arranging with your Ford Dealer for an "on-your-job" test!



FLEET OWNER, May 1941, Vol. 26, No. 5. Published monthly by the Ferguson Publishing Co., 90 West St., New York, N. Y. Subscription price $2.00 per year in the United States and Possessions; Canada and Foreign, $3.00 per year. Single copies, 25¢. Acceptance under the act of June 5th, 1934, authorized April 24th, 1941.

5 GREAT

MORE EFFICIENT operation, longer service between overhauls, lower maintenance costs . . . these are the reasons behind the overwhelming preference for Texaco in transportation.

One of the most important new products maintaining this enviable position is the great new oil . . . *TEXACO 303 MOTOR OIL.*

Texaco 303 is vastly different. It keeps engines CLEANER, with filters, oil lines and screens free from carbon and sludge. This new type oil also prevents oil corrosion of modern bearings. Its use assures fuel economy and less wear because rings stay free, maintaining full compression.

Operators of automotive Diesel and heavy-duty gasoline engines are reporting big savings. A Texaco Automotive Engineer will gladly cooperate in bringing similar savings to *you.* Phone the nearest of more than 2300 Texaco distributing plants, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

TEXACO'S FOUR FEATURES FOR FLEETS

TEXACO *FIRE-CHIEF* GASOLINE assures rapid acceleration, full power, greater economy, and continuous, uniform performance on the road.

TEXACO 303 MOTOR OIL — prevents oil corrosion, keeps filters, screens, oil lines open, rings and valves clean for longer periods of time.

TEXACO MARFAK—*HEAVY DUTY*—the *new* year 'round wheel bearing lubricant that *stays* in bearings, seals out dust and water, assuring increased bearing life.

TEXACO THUBAN for transmissions and differentials. Quieter operation, less wear on gears, requiring fewer replacements of parts.

TEXACO

REG T M

TEXACO

FIRSTS

in Transportation!

1 More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

2 More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

3 More revenue airline miles within the U. S. are flown with Texaco than with any other brand.

4 More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

5 More tourists use Texaco *Fire-Chief* Gasoline than any other brand.

Texaco Dealers invite you to enjoy FRED ALLEN in a full-hour program every Wednesday night, CBS, 9:00 E.D.T., 8:00 E.S.T.; 8:00 C.D.T., 7:00 C.S.T.; 9:00 M.S.T.; 8:00 P.S.T.

Lubricants and Fuels

FOR THE TRUCKING INDUSTRY

Part of the 50-truck fleet of the Advance Baking Company, Kansas City, Mo., another prominent Exide user.

Exide
HEAVY-DUTY TRUCK BATTERIES

Exides deliver 18 to 20 months' service in fleet of Advance Baking Company

THE 50-truck fleet of the Advance Baking Company serves Kansas City and vicinity with ABC Bread, covering over a million miles a year in making deliveries. Dependable Exide Batteries help these hard-working units to be on the job each day without delay. This operator is receiving an average of 18 to 20 months' service from every Exide.

Like other Exide users the nation over, the Advance Baking Company is enjoying extremely low battery cost per mile. This is because of the faithful dependability and the long, trouble-free life built into every Exide Battery. Exides today deliver an average of 25% longer life than ever before in their history.

These batteries are also available with wood and fiberglas separators for "cycling" service. See your Exide Distributor today, or write us for full details.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

EVERY TIMKEN BEARING IS MADE OF TIMKEN STEEL

Steel is the very heart of any bearing—and of its performance. That is why the Timken Steel Mill was built 25 years ago and why every TIMKEN Bearing today is made of TIMKEN Alloy Steel, the finest material ever developed for anti-friction bearings.

WHAT THIS MEANS TO YOU

Partly as a result of TIMKEN Steel every TIMKEN Bearing you install has high resistance to loads and shock, and will give long life under normal operation. Moreover, under similar operating conditions you may expect similar performance from any TIMKEN Bearing. Why? Because uniformly good steel results in uniformly good performance. Every automobile, truck and fleet owner appreciates this kind of bearing service.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO
Service-sales Division

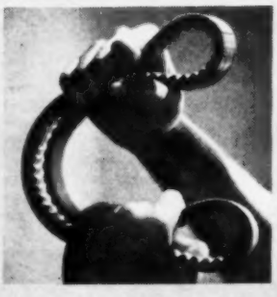
TIMKEN
TAPERED ROLLER BEARINGS

Dayton Fan Belts are Answering the Call

FOR ON-TIME DELIVERY OF PEAK LOADS

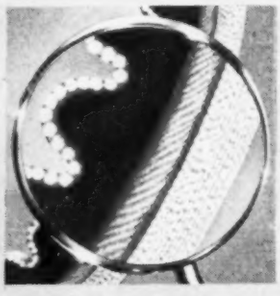
Daytons are Answering with

the only Fan Belts with Patented "Built-to-Bend" Construction for longer life and lower-cost-per-mile.



Daytons are Answering with

the only belt that has die-cut edges for greater gripping power. Daytons do not slip.

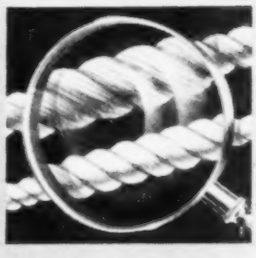


Daytons are Answering with

the only belt that has greater crosswise rigidity for straight-line pulling—no twisting or squashing in the pulley grooves.

Daytons are Answering with

the only belt that has heat-resistant Daytex Cord in the neutral section, for greater strength, longer life, and freedom from adjustment.



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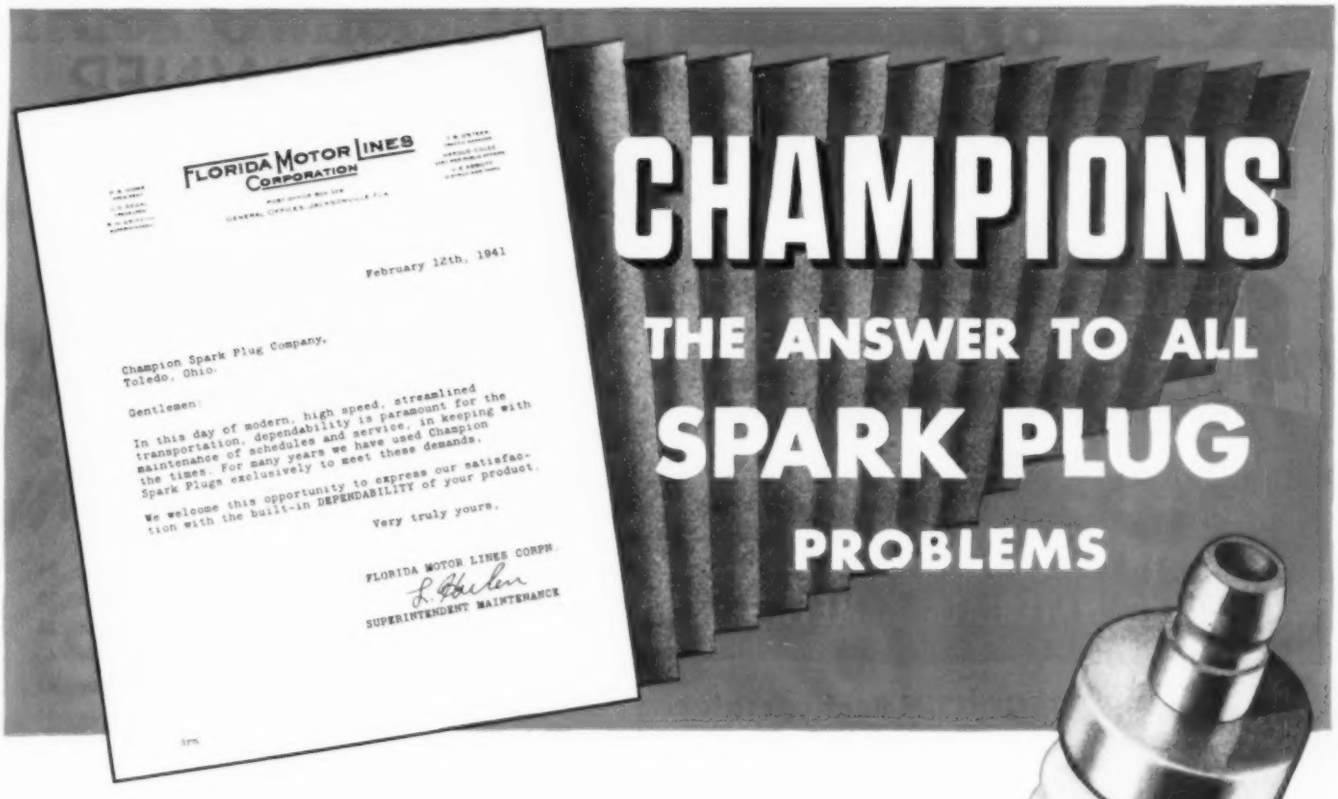
Dayton

THE GREATEST NAME IN FAN BELTS

85% ORIGINAL EQUIPMENT ON ALL AMERICAN MAKES OF CARS

THE DAYTON RUBBER MFG. CO., • • DAYTON, OHIO

FAN BELTS • CAR MATS • RADIATOR HOSE • ALLIED AUTOMOTIVE PRODUCTS

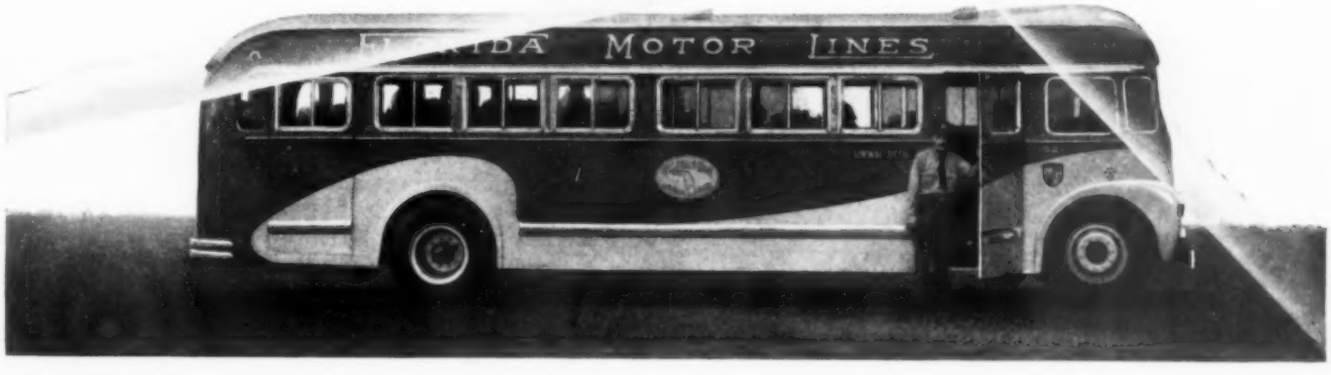

FLORIDA MOTOR LINES
CORPORATION
February 12th, 1941
Champion Spark Plug Company,
Toledo, Ohio.
Gentlemen:
In this day of modern, high speed, streamlined transportation, dependability is paramount for the maintenance of schedules and service, in keeping with the times. For many years we have used Champion Spark Plugs exclusively to meet these demands.
We welcome this opportunity to express our satisfaction with the built-in DEPENDABILITY of your product.
Very truly yours,
FLORIDA MOTOR LINES CORPN.
SUPERINTENDENT MAINTENANCE
CHAMPIONS
THE ANSWER TO ALL
SPARK PLUG
PROBLEMS

WHEN Champion Spark Plugs are selected year after year because of their ability to help maintain dependable schedules and service, they must be good. Letters such as the above from the Florida Motor Lines Corporation prove this to be a fact.

All you fleet operators know what happens when a spark plug is thrown out of its designated heat range. You get pre-ignition or fouling, generally caused by gas or compression leakage. The result is poor performance and several of your units in the shop.

Champion's Sillment Seal permanently seals Champions against troublesome gas or compression leakage *common to ordinary spark plugs.* This Sillment seal keeps Champions within their designated heat range, prevents their overheating and eliminates rough, uneven, wasteful engine performance.

Successful fleet operators have learned that dependable, economical performance is, to a great extent, dependent on the spark plugs they use and that's why the majority use Champions. To lower your own maintenance costs, you owe it to yourself to standardize on Champion Spark Plugs. Remember, Champions have for years equipped the majority of Bus Transportation Maintenance Award winners.



HOW WELL KNOWN

FLEET OPERATORS

Save Money

ON MAINTENANCE WITH OAKITE CLEANING MATERIALS & METHODS

. . . like this WISCONSIN fleet operator does in washing delivery trucks with NEW, different Oakite material

Whether you operate 20 or 200 trucks, you can keep them spic-and-span more easily, at less cost, with a NEW, amazingly different material . . . OAKITE COMPOSITION NO. 70! For like this Wisconsin fleet owner, you will find it meets a wide range of truck washing requirements.

First, this remarkable material is SAFE to use on ALL painted and lacquered surfaces, and the many new synthetic finishes. Its detergent and wetting-out properties thoroughly, quickly remove oily road grime and dirt.

Furthermore, it gives you these FIVE additional important, pre-tested advantages: (1) helps preserve original color . . . has no dulling or darkening effect; (2) rinses vertical surfaces, so that washing benefits by soaking; (5) does fast job.

MORE DETAILS ON REQUEST

Since Oakite Composition No. 70 has so many advantages and also is backed by a binding GUARANTEE, why not write for complete details? You have everything to gain, nothing to lose! Also ask for FREE 36-page booklet giving many money-saving tips for other cleaning jobs listed in panel at right.

NATION-WIDE SERVICE ON THESE JOBS

Cleaning carburetors, fuel pumps, etc.

Cleaning clogged radiators and cooling systems

Cleaning motors and repair parts

Safely washing truck, trailer, bus and taxi-cab bodies

Cleaning repair pits, service station, garage floors

OAKITE CLEANING HELPS YOU Save WITH Safety

Manufactured only by
OAKITE PRODUCTS, INC., 52G THAMES STREET, NEW YORK, N. Y.
Representatives in All Principal Cities of the United States and Canada

FLEET OWNER

(Automotive Fleet Headquarters)

Charter ECA Member

Published Monthly in the interests of Automotive Fleet Owners, who do all or part of their own Service, and devoted to the Better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.

Vol. 26 New York, May, 1941 No. 5

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Published Monthly by

FERGUSON PUBLISHING COMPANY, Inc.

90 West Street, New York, N. Y.

(Telephone: REctor 2-9179)

Hal H. Clark, President

A. L. Conley, Sec'y and Treas. — H. Clay Fischer, Editor

L. W. Perkins, Vice-Pres., 3260 Elsmere Rd., Cleveland, Ohio
Telephone: Longacre 2718

Irving E. Hand, Vice-Pres., 224 S. Michigan Ave., Chicago, Ill.
Telephone: WEBster 7502

PACIFIC COAST REPRESENTATIVE:
Norman C. Nourse & Associates, 1031 So. Broadway, Los Angeles, Calif.
Telephone: Prospect 4383

CIRCULATION SUPERVISOR:
George C. Friedman

NBP ASSOCIATION

Subscription: $2.00 Yearly; Single Copies 25c

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Truck Owners: You Get 25% More Mileage

in this year's new B.F. Goodrich Truck Tire!

It's First in Value!

Save with this New Mileage Leader!

SWITCH TO B. F. GOODRICH—and save! America's oldest tire manufacturer brings you in the new Speedliner Silvertown a regular-priced truck tire that is setting mileage records everywhere.

Users said the Silvertown was a winner last year. But right now—on one operation after another—this revolutionary new Speedliner is delivering a full 25% more mileage than even that great B. F. Goodrich Silvertown of 1940!

Four basic improvements make the difference . . .

1. New Type Load-Shield construction which eliminates floating breakers . . . puts breakers between plies in a reinforced tread foundation.

2. A special outer ply of B. F. Goodrich-discovered Tyton Rubber . . . a protective ply that distributes stresses and strains, reduces heat, provides firm anchorage for the tread.

3. A real truck tire tread—thicker, heavier, deeper-cut, flatter, with a wealth of extra rubber scientifically placed to give you the most in extra wear.

4. Compounds in tread and body fortified with Duramin, the amazing B. F. Goodrich chemical discovery which fights wear, prolongs tire life.

Four proven mileage-boosters . . . Now yours at no extra cost in a truck tire that is "First in Value" on its record of proved performance. See this longer-wearing Speedliner Silvertown before you buy. Visit your B. F. Goodrich Dealer or Goodrich Silvertown Store.

Here's Proof of EXTRA MILEAGE

Let this tread comparison be your guide to truck tire savings. See the extra volume of rubber in the tread of the new Speedliner Silvertown? It will give safe mileage long after an ordinary tread has worn to the cords! And you get three other proven mileage-boosters when you buy Speedliner Silvertowns.

When you buy new trucks ask for B. F. Goodrich Silvertowns

B.F. Goodrich Speedliner Silvertowns

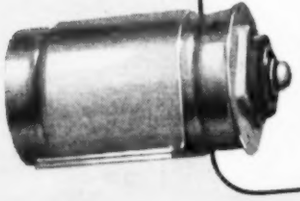
FOR TRUCKS AND BUSES

Delco-Remy Heavy-Duty Equipment Increases Operating Efficiency

• **Designed and built specially for service in trucks and motor coaches, Delco-Remy oil-filled heavy-duty coils and condensers, and heavy-duty contact points, are popular replacement units among maintenance men. Installation of these Delco-Remy products results in longer service life, fewer road failures, and lower operating costs. Your nearest United Motors distributor will show you the outstanding features of these Delco-Remy units and their importance to coach and truck operators.**

OIL-FILLED HEAVY-DUTY COIL

Hermetically sealed against the entrance of moisture, these new-principle coils are specially built for long, tough service with heavy-duty equipment. Area between the coil windings and the outside case is filled with oil of high dielectric quality—providing the finest type of insulation. Case is a one-piece casting to which the arc-resistant cap is hermetically sealed. These units are available for either 6- or 12-volt operation.



OIL-FILLED HEAVY-DUTY CONDENSER

Built on the same principle as the coil, this oil-filled condenser is filled with insulating oil and then hermetically sealed against the entrance of moisture. Extra-long service life is obtained with this unit, which is available in three capacities for HIGH, MEDIUM and SLOW operating speed ranges.

HEAVY-DUTY CONTACT POINTS

Motor coach operators are standardizing on these new Delco-Remy distributor contact points for replacement. They have almost twice the contact area, and more than 100 per cent more tungsten than is used in ordinary points. The movable arm is a triple-channel design for strength and rigidity; has a larger, stronger bushing and a special impregnated-fabric rubbing block. Alloy steel, extremely resistant to corrosion and fatigue, is used in the manufacture of the spring.

UNITED SERVICE MOTORS

Delco-Remy

ANDERSON, INDIANA

Delco-Remy service parts are available through independent United Motors distributors served by twenty-one conveniently located warehouses.

World's Largest Manufacturer of Automotive Electrical Equipment

"We've Never had Trucks as Satisfactory as our DODGE DIESELS

...they're the most economical trucks we've ever owned!" SAYS ROLAND BROPHY

M. & A. MERRITT EXPRESS, INC., SALEM, MASSACHUSETTS

● **Low cost fuel . . . big mileage . . . a double saving! That's the satisfying experience that prompted the M. & A. Merritt Express, Inc., to add three new Dodge Diesels to their fleet within the past year!**

And this money-saving experience is typical of Dodge Diesel performance on many hauling jobs. It's typical of the fine performance and greater economy *you* can reasonably expect from a heavy-duty Dodge Diesel *Job-Rated* truck . . . a truck that *fits your job.*

Get the full story on Dodge *Job-Rated* trucks today. Remember—Dodge *Job-Rated* trucks are priced with the lowest for every capacity! Ask your dependable Dodge dealer about easy budget terms.

DODGE DIVISION, CHRYSLER CORPORATION, DETROIT, MICH.

Prices subject to change without notice

YOU, Too, Can Cut Costs, Save Money with these 8 BIG DODGE DIESEL ADVANTAGES

1. Savings up to 55% on fuel costs, according to owners' reports, over comparable gasoline-powered vehicles!
2. Higher speeds on grades and faster acceleration mean higher average speeds—clip hours from scheduled runs!
3. Less time on the road means lower costs for drivers' time—lower labor costs per trip—an important saving!
4. Reduced gear shifting and easier driving qualities increase drivers' efficiency and contentment—decrease fatigue!
5. Greater *safety* all around . . . for driver, owner, load and public; less fire hazard; practically no carbon monoxide in exhaust!
6. Reduce service delays. DEPENDABLE—they stay on the job, get loads through!
7. Faster deliveries, fewer delays, mean better service!
8. Promote public good will because of higher road speeds and virtual absence of smoke!

DEPEND ON DODGE *Job-Rated* TRUCKS

*Job-Rated MEANS: A TRUCK THAT FITS YOUR JOB

PRICED LOWER THAN ANY OTHER DIESEL OF EQUAL CAPACITY AND POWER

A good truck has good brakes

A good driver has good judgment

and good

VACUUM BK POWER BRAKING
A BENDIX PRODUCT

makes them both better

YOUR magnificent record in highway safety and operating efficiency—you men of America's truck industry—would hardly have been achieved unless you had these three great assets:

1. Good trucks with good primary brakes.
2. Good judgment behind the steering wheel.
3. Good power braking on a large percentage of your trucks.

We build the third of these vital assets, as you know . . . Bendix BK Controlled Vacuum Power Braking. In simple justice to a magnificent mechanism, proved on millions of vehicles, we remind you of its importance; we urge you to keep your service personnel informed of the continual improvements introduced to enhance its usefulness to you; we respectfully suggest that you bear in mind and make fullest use of the thousands of trained Bendix men in towns and cities from coast to coast, who stand ready to render you every desired service on Bendix BK Power Braking.

Your trust in so excellent a product demands and gets our utmost care and attention.

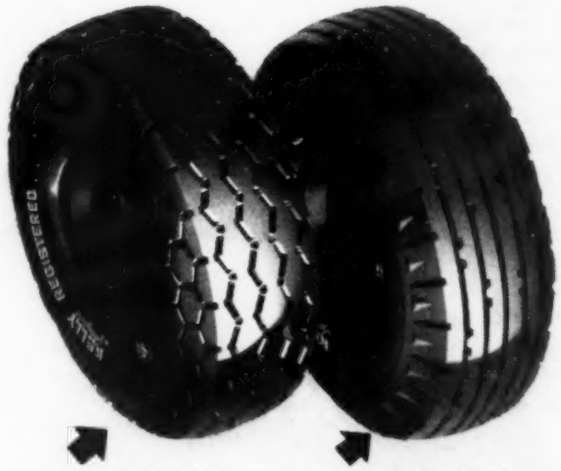
The 10 to 1 favorite among all forms of *Power Braking*

BENDIX PRODUCTS DIVISION
OF BENDIX AVIATION CORPORATION · SOUTH BEND, INDIANA
In Canada: Bendix-Eclipse of Canada, Ltd., Windsor, Ontario

• ***ARMORUBBER*** **KELLYS ARE TOUGH—DO HARD JOBS WELL** •

Kellys Can Take it

234,000 MILES WITHOUT MISSING A TRIP



NEW KELLY REGISTERED
Combined rib-tread and traction block design.

NEW KELLY SPRINGFIELD
Ideal rib-tread design.

Newly designed to maximum size—treads 10% to 15% thicker—carcass almost 50% stronger. *Armorubber* tread compound tougher than ever.

CALL ON YOUR KELLY DEALER. SEE WHY IT PAYS TO BUY KELLYS.

THAT'S THE 5-YEAR RECORD of drivers Al Branton and Homer Hartsen. They've herded Helms' big transports over the roads for five years without a miss.

They take pride in their unbroken record of the spick-and-span condition of their trucks. And they place full confidence in their Kelly Tire equipment.

Ask their boss, Munson Palmer, why so many of Helms' three hundred units are Kelly-equipped. He's proved by experience that Kellys are tough, dependable, and cost less per mile.

If you can't afford to take chances—equip with Kellys, now stronger and tougher than ever. They will reduce your final cost per mile.

KELLY
Springfield
TIRES

DEPENDABLE FOR 47 YEARS

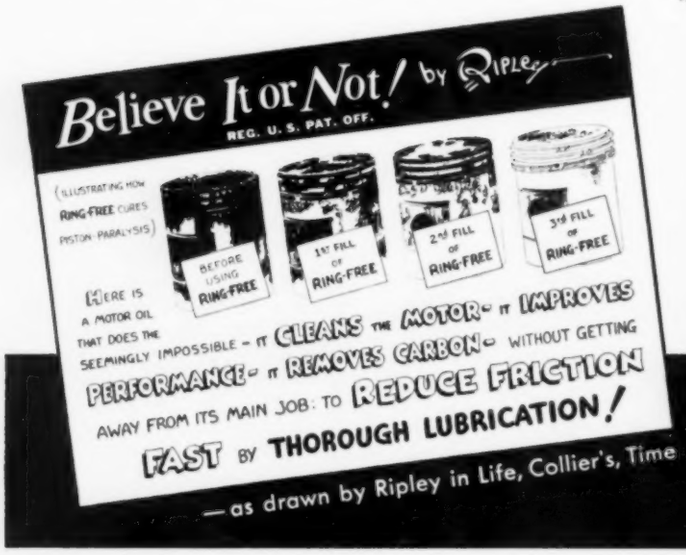
BELIEVE IT OR NOT!*—
"OIL CHANGES AND FILTER CHANGES CUT IN HALF"

—SAYS NEW PROCESS LAUNDRY SAN FRANCISCO

IRVING J. DUPREY
in charge of fleet maintenance

Keeping this attractive fleet of package cars in "apple pie order" is Mr. Duprey's job . . . a job recently made more economical by Ring-Free Motor Oil. They've been using Ring-Free in their entire fleet of package cars and coupes more than six months. Results? Listen to E. J. Corbett, general manager of the company: "The results have been most satisfactory . . . oil changes have been cut in half . . . so have filter changes . . . oil consumption is approximately two-thirds of what it was." Try Ring-Free in your own fleet. See how it saves in other ways, too: cleaner motors, less wear, more gas-mileage. Proof? Call the Macmillan Man or write direct.

MACMILLAN PETROLEUM CORPORATION
50 WEST 50TH STREET, NEW YORK • 624 SOUTH MICHIGAN AVENUE, CHICAGO • 530 WEST 6TH STREET, LOS ANGELES


Believe It or Not! by Ripley
REG. U. S. PAT. OFF.
(ILLUSTRATING HOW RING-FREE CURES PISTON PARALYSIS)
BEFORE USING RING-FREE
1st FILL OF RING-FREE
2nd FILL OF RING-FREE
3rd FILL OF RING-FREE
HERE IS A MOTOR OIL THAT DOES THE SEEMINGLY IMPOSSIBLE – IT CLEANS THE MOTOR – IT IMPROVES PERFORMANCE – IT REMOVES CARBON – WITHOUT GETTING AWAY FROM ITS MAIN JOB: TO REDUCE FRICTION FAST BY THOROUGH LUBRICATION!
—as drawn by Ripley in Life, Collier's, Time

MACMILLAN RING-FREE MOTOR OIL

*Reg. U. S. Pat. Off.

Copyright 1941 by Macmillan Petroleum Corporation

CHEVROLET
Light Delivery Units Are Built To Take It

Impressive in their outward styling, Chevrolet's 1941 Light Delivery units are equally impressive in their concealed values—for underneath their sleek lines and contours they are genuine *trucks,* through and through.

Look under the hood and you'll find the Chevrolet Standard *truck* engine, full 90 horsepower, designed for economy and efficiency—an engine with extra-strong *truck* pistons, and with a high-capacity *truck* cooling system.

Look under the body, too. If you are used to seeing passenger-car chassis construction in your delivery units, you'll be surprised at the difference in the Chevrolet. Note particularly the frame, with its deep side-rails and its five rigid cross-members. Note the heavy front axle, the sturdy steering gear, and especially the rear axle—having not one major part interchangeable with any part of the passenger car axle.

In short, Chevrolet's Light Delivery units *are truck-built to do truck work*—and to do it with Chevrolet's traditional economy of operation and upkeep.

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation,* DETROIT, MICH.

Inspect these

NEW 1941 FEATURES

★90-HORSEPOWER VALVE-IN-HEAD ENGINE . . . 174 FOOT-POUNDS OF TORQUE ★ NEW RECIRCULATING BALL-BEARING STEERING GEAR ★ NEW, MORE COMFORTABLE DRIVER'S COMPARTMENT.

60 MODELS

ON NINE LONGER WHEEL-BASES . . . A COMPLETE LINE FOR ALL LINES OF BUSINESS

CHEVROLET TRUCKS
"THRIFT-CARRIERS FOR THE NATION"

New INTERNATIONAL* Trucks

NEW HEAVY-DUTY POWER, PERFORMANCE, ECONOMY

The new cabs are designed for highway safety, driver-efficiency and driver-comfort. Foam-type rubber seat cushion, adjustable seat back, generous head and leg room. All-steel construction, safety glass all around.

HERE'S a new view of America's *favorite** heavy-duty truck — completely redesigned and geared for the extraordinary demands of 1941. This year, trucks and the highways on which they roll assume a new importance in the nation's No. 1 job — National Defense. The New Internationals are superbly fitted for today's transportation needs.

One look and you see modern streamline styling at its best. Put these new Internationals to work and you get a new idea of *performance, power* and *stamina*— and *unbelievable operating economy.*

These new K-Line Internationals have new Hi-Tork hydraulic brakes for smooth straight-line stops—no grabbing, fading or squealing. New, easier steering for greater safety and tireless handling. New, improved frame construction; new, rugged rear axles; and new, longer, easy-riding springs. And powerful, 6-cylinder, valve-in-head engines designed and built by International to lick the toughest jobs.

The new International line includes all sizes from the ½-ton delivery up to powerful 6-wheelers. Write for catalog.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago, Illinois

FREE MOVIE—"SINGING WHEELS"
Thrilling 22-minute feature produced by Motor Truck Committee, Automobile Manufacturers Association. Now ready for club and organization meetings. Write to Harvester.

*** For ten years more heavy-duty Internationals have been sold than any other make**

VOL. 26
NO. 5

FLEET OWNER

MAY
1941

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

Stripping *the* Thread » »

(The Editor's Column)

I.C.C. TESTS BRAKES

● Elsewhere in this issue you will find quite a lengthy report on what the Interstate Commerce Commission found out about truck and bus brakes, after testing over 1,700 vehicles in various parts of the country. . . . There's a bit more to the report (in the form of further breakdowns, analyses and tables) but we rather imagine that you will find our "digest" to cover the most pertinent of their findings. . . . It is interesting (and perhaps alarming) to note that comparatively *poor* brake performance was found to prevail, especially since the vehicles tested were picked at random out of actual service. . . . Their outstanding finding was that braking performance got worse, as the gross weight increased; in other words, the bigger the vehicle or combination and its load, the lousier was the brake performance—in straight trucks, tractor-trailer jobs, and truck-full-trailer jobs alike, but not so much in buses. . . . A comparatively poor braking performance was exhibited by the tractor-trailer and truck-trailer combinations. For instance, only 21 per cent of all the tractor-semi-trailers tested were able to meet the I.C.C. brake performance requirements, i.e., to stop within 30 feet from a speed of 20 m.p.h. with brakes on all wheels. . . . Of the two-axle straight trucks with brakes on all four wheels, only 40 per cent met the I.C.C. requirements (30 feet), while approximately 75 per cent could stop within 40 feet. . . . Slightly more than 50 per cent of the buses tested met the I.C.C. requirements, and about 90 per cent showed braking distances within 40 feet. . . . You'll find all of the details of these tests in the 4-page article with graphs, tables, etc., that appears elsewhere in this issue. It is quite lengthy but we suggest that you read it carefully. . . . The I.C.C. report also draws several conclusions, which seem worthy of study by you fleet fellows. It is quite natural that this brake performance deficiency is going to be blamed on *something*, the indications pointing to (a) overloading, (b) poor selection of power brake equipment, (c) insufficient maintenance of brakes, (d) insufficient lubrication of linkage and (e) the question of original-equipment brake adequacy. . . . In connection with the last-mentioned, it appears that if such is found to be wanting, steps might be taken (yes, legislative) to insure the inclusion of "adequate" brakes on new vehicles when they leave the factory, with some sort of a proviso that "a certain number of square inches of brake area be provided for each 1,000 pounds of gross vehicle weight." . . . And since in the future the maximum gross vehicle weight will be included on a plate affixed to each vehicle, it won't take much slide-rule mathematics to determine whether the original-equipment brakes are "adequate" or not. . . . Somewhere back in engineering archives, there seems to repose such a formula; we've heard it quoted at meetings, but have never seen it in print. . . . Then too, certain stipula-

(Please turn to next page)

TIE-UP. . . . Central Truck Lines, serving Florida and Georgia, pictures one of their highway emissaries with their featured radio singer, one Miss Dorothy Sims.

JEKYLL & HYDE. . . . Extensions at the top of this trailer body permit it to carry larger loads of finished boxes, top picture. . . . Without the extensions (lower) it hauls capacity loads of lumber.

H. Clay Fischer
Editor

The Editor's Column » »

(Continued from Page 19)

GLAMOUR. . . . The object of this picture is NOT the attractive miss perched atop the fender. . . . The story pictured on the side of the truck is what you should look at. . . . It shows how civic-minded operators can help to promote community interest.

HONEYMOON for Three! . . . The third member of the party is the truck—as if you hadn't guessed. . . . Leo Clark of Bigfork, Mont., chose a novel honeymoon conveyance—a 1½-ton Dodge truck, in which they drove back home from the Dodge plant in Detroit.

tions might be made as to the "adequacy" of power available to actuate these large brakes, such as the size of the vacuum cylinder, the capacity of the air compressor and tank, and in the case of electric brakes, we don't know what. . . . Of course, the vehicle manufacturers have always voluntarily worked with such yardsticks, and it is possible that *other* factors are to blame for such apparently poor brake performance as has been shown in the I.C.C. tests. Perhaps too many people have their "fingers in the pie" *after* the chassis leaves the truck factory, and the selection of accessory braking equipment is poorly or ill-advisedly made in some cases? . . . Or, again perhaps, careless or indifferent maintenance methods (although we'd *hate* to admit that) are responsible? . . . At any rate, the Interstate Commerce Commission plans further intensive study of the problem of improving brake performance of commercial vehicles and combinations. . . . They plan to dig in deep and get at the root of the trouble, starting with the "adequacy" of brake equipment, then investigating the "maintenance" angle, and next looking into the question of "overloading." . . . Perhaps quicker progress might be made by reversing the order of the procedure just mentioned? We don't know. . . . We *do* know, however, that their study will include a broad research program to establish standards of brake performance for vehicles under various conditions of loading and speeds, in which manufacturers, fleet operators and others are expected to cooperate. . . . All in all, it looks (to us) as though the I.C.C. brake tests have really uncovered something that will bear further watching; can you take a hint?

LOOK OUT THERE!

● Don't get excited boys! . . . This is not the latest attempt of the railroads to compete with trucks by putting freight-cars on the highways; rather, it's the other way around. . . .

It seems that a New York state rose-grower purchased the condemned freight-car body from a rail line, for use in his business. . . . Bill Barhite, general contractor of Medina, N. Y., didn't get scared when the moving contract was thrown into his lap, to load this 40,000-lb. refrigerated body on one of his trailers and haul it a couple of miles across country. . . . One of his big cranes lifted the huge freight-car body on and off the trailer, and Bill wants to know "Who is the biggest hauler now?"

●

PRIVATE OPERATORS:

● If you own 5 or 5,000 trucks and want to protect your investment, you must *know* of the problems that confront you as a private motor truck owner; the government calls them "private carriers." . . . You must cooperate with other private truck owners who operate 3,600,000 private motor trucks—86 per cent of all the trucks on the highways. . . . You must help support the national organization which speaks exclusively for you—acts exclusively for you! . . . The National Council of Private Motor Truck Owners, Inc., down at Washington, D. C., is the *only* association which speaks exclusively—acts exclusively—for the ownership of all privately-operated trucks in America and exclusively helps to protect your private truck investment. . . . If you own, use or depend on privately-operated trucks in your business, membership in the National Council of Private Motor Truck Owners, Inc., will help you. . . . A 16-page booklet, just off the press, tells the story of the need for, the organization objectives and the accomplishments to-date of this organization. . . . The reading time is but nine minutes. . . . Why not write for a copy and see what it is all about. Address National Council of Private Motor Truck Owners, Inc., National Press Building, Washington, D. C. . . . Please do not write *us* for this booklet, as we have but one in our files.

●

PAGE MR. WEBSTER!

● A new definition of the word "carburetor" is found in some literature issued by Bendix-Stromberg. We quote: *"In a sense, the carburetor is a 'purchasing agent' to whom the motor vehicle operator entrusts his gasoline dollars for purchasing—not gallons of gasoline—but miles of transportation. It is obvious that better carburetion buys more miles per dollar".* . . . We have heard purchasing agents called many different names; no one has yet called them a "carburetor", to our knowledge.

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ALUMINUM, DEFENSE, AND YOU

ALCOA

2

ANOTHER MONTH!

DEFENSE IS GETTING its aluminum; but priorities are in effect, and many regular users of aluminum are having to do without.

YOU, SIR, may be one of those who have to wait. It *is* a hardship. It *is* awkward. Customer by customer, we are intimately and acutely aware of the dislocation of plans caused by this temporary shortage of metal.

BUT YOUR ALUMINUM *is* on the way. It is a promise.

IN MARCH we produced more than 44,000,000 pounds of new metal. That is 63% more than in the average month of 1939. Enormous new plants, already completed, made this possible.

STILL MORE producing units are coming in as fast as brick and steel and equipment can be put into place. We are getting superb co-operation from suppliers. A capacity of 60,000,000 pounds a month is definitely programmed, by day and date, at this writing.

PRAY FOR RAIN. Good precipitation assures the water power that we need to keep breaking production records. Production of aluminum depends on getting the power.

TWO POUNDS OF ALUMINA are needed for each pound of aluminum. We are jumping Mobile, Ala., alumina refining facilities from a million to 2,200,000 pounds a day. That requires among other equipment, 64 precipitating tanks, 24 feet in diameter, standing 80 feet high. They would hold all the wheat grown in Wisconsin.

FORGING EXPANSION is an example of swift increase in fabrication capacity. On the first of January, 1940, we had 47 hammers, presses, and upsetters. Today: 110. Increase: 134%. We await delivery on 26 more units, which will make a total of 136, an increase of almost 200%. Falling weight of the hammers alone is over three times that of January 1, 1940.

ROLLING CAPACITY for wire, rod, bar, and shapes has been increased 2½ times. Expansion in sheet rolling capacity was reported to you last month.

COMPARED TO THE fifty-some years it took the use of aluminum to reach 1939 levels, you might say that the industry is having to more than duplicate itself over the week end.

THESE PARAGRAPHS are factual evidence of our determination that no one shall have to forego the things aluminum does best one minute longer than we can help.

IT IS A PROMISE.

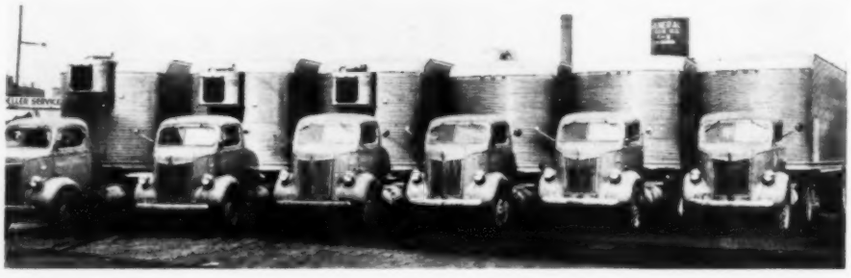
ALUMINUM COMPANY OF AMERICA

Stripping *the* Thread » »

(Continued from Page 20)

THE RIGHT DIRECTION

● One of the most significant indications of a change in public attitude toward highway transportation was evidenced in Austin, Texas, last month when Governor W. Lee O'Daniel signed the 38,000-lb. gross limit law for trucks. This new measure replaces the 7,000-lb. payload limit which has been a highway barrier in the state for over a decade. The Senate approved it by a vote of 24 to 5, and by the House, 118 to 5. . . . The Texas legislature apparently recognizing that such drastic infringement of a basic human right—the freedom of the highways—would interfere seriously with national defense preparations, repealed the law and enacted the new statute. . . . In addition to this great victory of highway transportation in overthrowing a viciously restrictive law in Texas, important liberalizing truck laws were enacted in other states. . . . Tennessee increased its gross weight limit from 24,000 to 30,000 pounds. . . . The North Dakota gross weight was increased from 35,000 to 40,000 pounds. . . . Washington raised the gross weight of two-axle vehicles to 28,000 pounds. . . . A law was adopted in Georgia which increases the allowable weight per axle from 17,600 to 18,000 pounds. It repeals the former maximum weights, and substitutes the formula recommended by the American Association of State Highway Officials. The law also increases the length of single trucks from 30 to 35 feet. . . . The Maryland legislature adopted a measure to increase gross weights of motor vehicles, fixing the weight per axle at 22,000 pounds. Under the formula adopted, the top weight will be between 60,000 and 70,000 pounds for trailer combinations. . . . The Indiana legislature repealed the 40,000-pound maximum weight limit, and substituted a formula permitting a maximum gross weight of approximately 56,000 pounds on semi-trailer and trailer combinations. Single four-wheel units, granted an increase in length from 33 to 36 feet, may weigh approximately 36,000 pounds. . . . The Indiana truck-tire tax and the Tennessee mileage tax were repealed. . . . Although dozens of bills to place additional taxes and drastic restrictions upon the use of the highways were introduced this year in the state legislatures, virtually all of such measures have met decisive defeat.



REFRIGERATED. . . . Lots of reasons for running this picture. . . . The trailers are new stainless-steel Fruehaufs. . . . Refrigeration is by the new "Thermo-King" self-contained refrigeration unit. . . . And the tractors are Ford C.O.E. jobs. . . . This is part of the fleet operated by The Mueller Truck Line of Chicago, Ill.

●

MAN BITES DOG

● Hauling a heavy locomotive over a mountain more than a half-mile high is quite a feat—especially when it is done by truck. . . . It's almost as great a news item as the famous dog-biting man. . . . Coming 'round the mountain, this job startled the natives of Virginia, when Draper Motor Service of Roanoke undertook the job. . . . The locomotive weighed 35 tons and was moved from Roanoke to Welch, West Virginia, across Brushy Mountain, which has an elevation of 2,826 feet. . . . Draper used one of his 16-year-old "Carryalls" and successfully accomplished the job. . . . And the mountain folks are still talking about it.

●

THE LITTLE THINGS

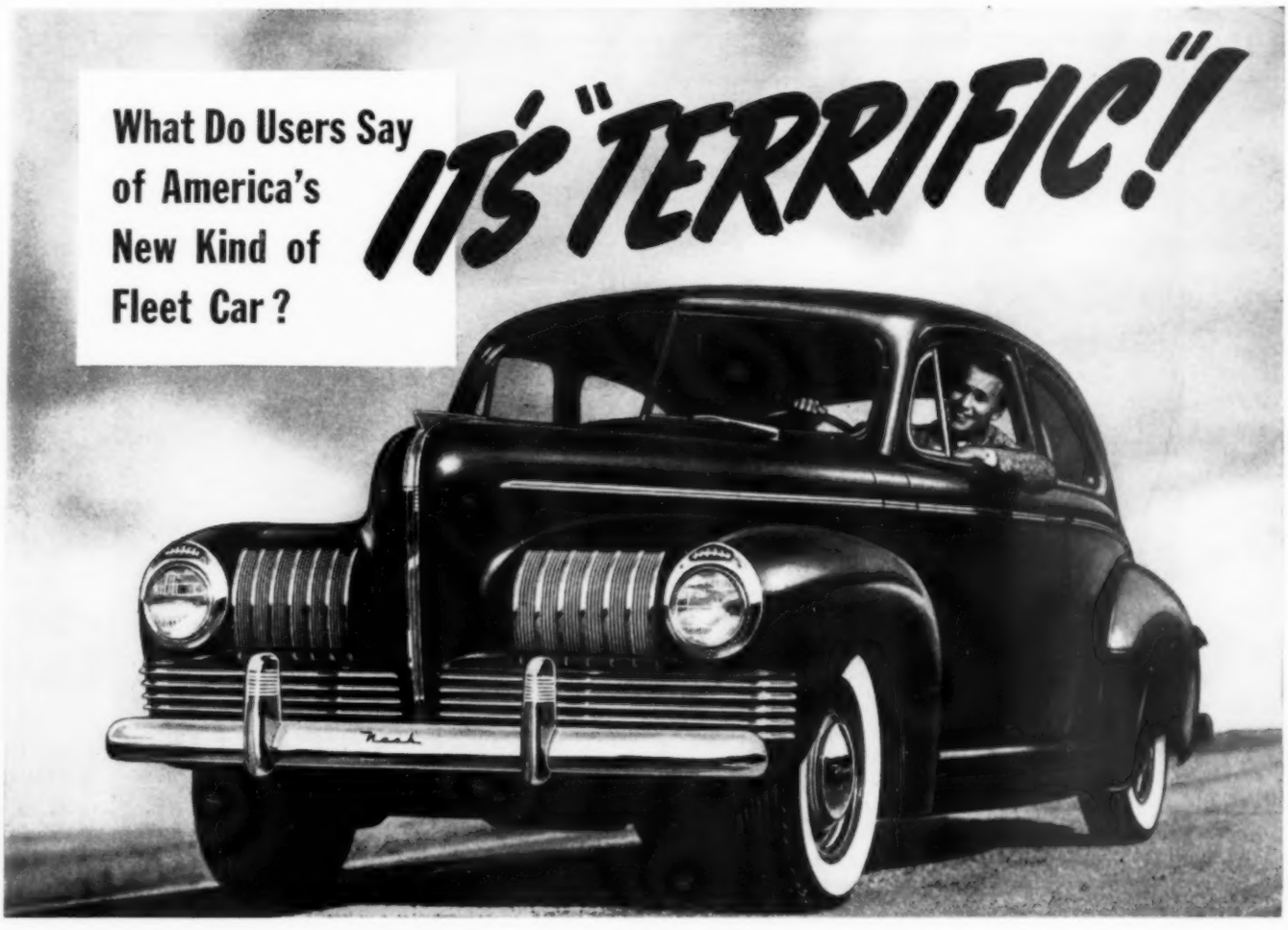
● It's the little things that count. How often have you heard that saying. . . . When 24 truck drivers of a mid-western motor carrier recently were presented with safety awards, the concensus of opinion among these drivers seemed to be that their safety success was due to constant attention to their jobs, a good knowledge of driving principles plus a good physical and mental condition. . . . The last mentioned is most important. . . . "Little things" on a driver's mind can easily turn into big headaches. . . . The most interesting phase of this merit award was furnished by the star driver—the "dean" of the fleet's drivers, who won the longest-term safety award. . . . This fellow, Charles Kraft by name, attributed his safe-driving achievement to his wife's constant admonitions to "Get home safely", and Mrs. Kraft "shares" his award with a great deal of pride. . . . Yet, it's the *little* things that count.

●

WHY TAXES ARE HIGH

● Sixty-three Trenton, New Jersey, selectees ordered to go to Fort Dix, N. J., by train recently, were not ready when the train pulled out. . . . They could have been sent by bus later in the afternoon, but because of Army regulations, they were sent to a down-town hotel for the night, dinner and breakfast paid for, and ordered to wait for the train the next day. . . . Bus men might get busy on things like this.

TRAILERIZED TANK. . . . That's what they call the unit pictured here. The Heil Company built it and claims it to be the first all-aluminum, frameless tank fabricated for the oil industry. . . . National defense requirements may curtail further development along this line, but this new unit will likely be watched by oil men throughout the U. S.



Here are Road Reports from Business Men All Over America on the Sensational New Nash Ambassador "600". Read them, then See Our 30-Day Free Trial Offer Below.

"A recent trip of 3,642 miles cost us exactly $31 in our new Nash. Showed utmost performance in snow, sleet, rain, fog and over every kind of road in use. City driving a cinch. Used convertible bed on trip, so we saved at least $25."
—S. M., *Minneapolis*

"Your new '600' tops them all from just about every angle. As a hardware salesman, I average 150 miles a day at the wheel; and I can sure feel the difference in four-wheel coil springing. My records show I am getting over 25 miles to the gallon and saving on oil, tires and even license plates. This Nash Conditioned Air is the finest thing ever put in an automobile."
—E. M. J., *Grand Rapids*

"Incidentally, may I state my gasoline average consumption over approximately 6,600 miles has been from 28 to 32 miles per gallon."
—F. L. S., *Portland, Oregon*

★

"As an engineer and manufacturer's representative doing 25,000 miles a year, I look forward to a considerable saving, as my Nash is averaging close to 25 miles a gallon at speeds of 50 and 60 miles an hour. The Nash Conditioned Air and soft ride, with four coil springs, make my job a lot easier."
—H. E. F., *Detroit*

"We are getting about 8 to 10 miles per gallon more than we did from our last low-priced car."
—G. C., *Portchester, N. Y.*

"Accurate records on a trip that carried me across America twice show that I received an average mileage of 25.53 miles per gallon. I do not recall ever having to shift gears on hills. The way it holds the road on curves is amazing."
—D. L., *Portland, Oregon*

"Economy has really been remarkable—as high as 32 miles to the gallon in overdrive."
—G. O. D., *Oakland, Calif.*

$755 2-DOOR SEDAN (Illustrated)

NASH PRICES START AT $720 for a big business coupe. All prices delivered at factory include federal tax, standard equipment. Weather Eye, Convertible Bed, Fourth Speed Forward, Bumper Guards, optional extras. Delivered at Factory

NASH-BUILT FOR LONGER LIFE AND LOWER UPKEEP COSTS

★ **Nash's Modern Body Construction** has body and frame solidly welded together. It's stronger, larger—yet 400-500 lbs. lighter.

★ **Super-Service "Permalux"** enamel exterior outlasts finish on most cars. All Nash body sheet metal completely rust-proofed.

★ **Sealed-in Manifolds** for gas and oil, start Nash engines quickly in cold weather.

★ **Full Length Water Jackets** prevent uneven heat expansion of cylinders, lengthen engine life.

★ **Full Pressure Lubrication,** even to wrist pins, insures years of smooth, trouble-free service.

Go NASH AND SAVE MONEY EVERY MILE

30 DAYS FREE* TRIAL
To Prove This New Low-Price Nash Out-Economizes . . . Out-Rides And Is Better In Every Way Than The Fleet Cars You're Using Now.
*This Offer Restricted To Large Fleet Operators.

NEW streamlined, standardized van body, built in Mayflower's own shops in Indianapolis on a regular production-line basis, as illustrated and described in this article. . . . More than 50 of them have been built thus far, we are told.

"WE STREAMLINE OUR VANS"

•

By John S. Smith,

Vice-President,
Aero-Mayflower Transit Company,
Indianapolis, Ind.

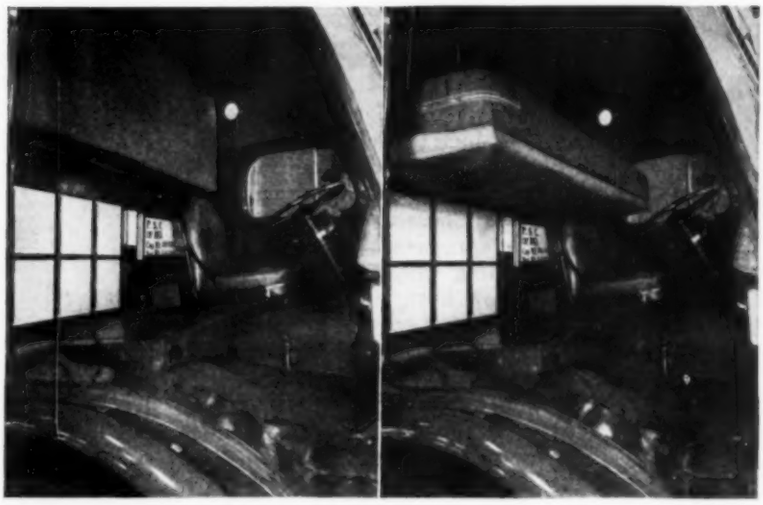
IN THE successful operation of our fleet of moving vans in 48 states and various provinces of Canada, our company, The Aero-Mayflower Transit Company, has met and solved a number of interesting fleet-management problems. Notable among these is the design of an efficient, standardized van body, the development of a smooth-working system of maintenance and shop work, and the organization of a group of well-trained drivers who are continually winning acclaim because of their courtesy and workmanship.

Your Editor has asked us to elaborate on these accomplishments, for the benefit of other fleet operators in various lines of business, and we are pleased to comply. Since we are particularly proud of our newest development in streamlining our vans, we will cover that subject in this article, leaving the maintenance and driver-organization programs to be covered in future issues.

Prior to 1930, we used various models and sizes of trucks. Realizing that a standardized unit was absolutely essential for efficient low-cost operation, we adopted a special van body with 1,000 cubic feet inside capacity on January 1 of that year. (Recently this was increased to 1,200 cubic feet.) In order to exercise strict control at all times over the selection of high-grade materials and construction, we decided to build our own bodies in our own shops at Indianapolis, Ind.

That was in 1930, and we have been building our own bodies ever since. At the outset it was obvious that standardization of chassis was also desirable, and we chose International, which we are still using. The recent addition of new Model D-500 cab-over-engine units accompanied the re-designing of our bodies, the result being the streamlined van illustrated at the head of this article, which was designed especially for this chassis. Up to now, a fleet of these units

HOW AERO-MAYFLOWER BUILDS ITS OWN TRUCK BODIES



SLEEPER cab interior of the new Mayflower vans. . . . Note the bunk, which has spring-filled mattress, and folds up out of the way when not in use.

have been built and are in service.

This new streamlined van body is mounted on the D-500 International cab - over - engine chassis of 178-inch wheelbase. The unit measures 26 ft. 6 inches long over all, is practically 8 ft. wide, and has an over-all height of 10 ft. 7 inches when empty. The construction of this body, while using composite panels, is basically of steel, based upon what is called the "semi-ribless" method of body fabrication.

This type of construction incorporates the use of metal-covered plywood panels, ⅜-in. thick, together with specially-designed, pre-fabricated sheet-steel body accessories. Because of the inherent stiffness of the paneling, the use of very small ribs (or stiffeners) is made possible, on both side-walls and roof. This ⅜-in. paneling is used for the roof, the side-walls and the rear doors. Roof panels have metal on the exterior side only, while side-walls are metal-covered on *both* inside and outside.

The rounded roof and vertical corners of this body are made of 16-gauge sheet steel, curved to a radius of 5⅜ inches and formed at the edges to provide an offset in which the panels rest. The front portion of the roof, directly over the cab, is made entirely of sheet metal, and is hand-formed. The roof rails and the front roof stamping are welded together during assembly, to form a rigid all-steel frame, and the panels are then laid in the offsets provided on the rails, and fastened to the flanges of the offset with specially-designed split rivets.

Joints in the roof panels occur approximately 42 to 48 inches apart, and small 16-gauge U-shaped ribs or carlines are riveted to the underside of the panels, one rib being placed under each panel joint and three ribs being used in between the joints. The illustrations appearing on the third page of this article show step-by-step intervals in the fabrication and assembly of this type of body. These photos, incidentally, were taken in our own shops at Indianapolis, quite recently.

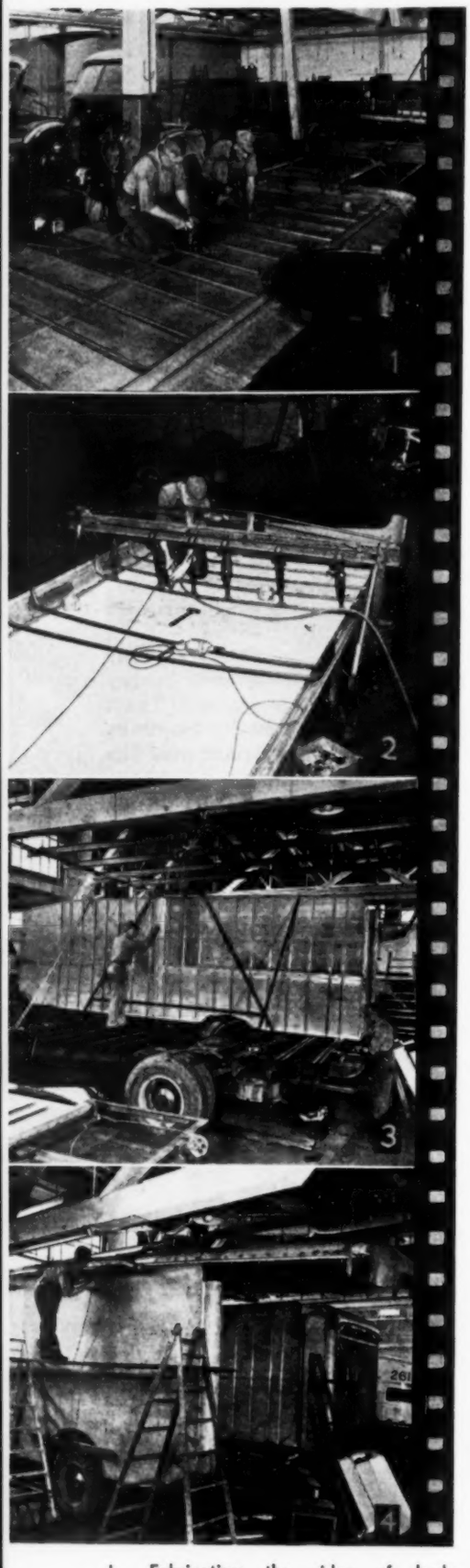
The side-walls of the body are made up of four panels—two upper and two lower ones, each having metal facing on *both* sides, as before stated. These panels are joined vertically and horizontally by means of ⅛ x 5-inch galvanized metal bands, laid over the joints on the inside, and riveted in place.

The connection of the side-walls and floor is accomplished through the use of galvanized bar angles. For stiffening the side-walls, the U-shaped carline bracing is also used, and is fastened to the inside of the panels as a continuation of the roof ribs or carlines. These carlines continue down the side-wall to the top of the floor angle, where the bottom edge of the rib is welded to the flange of the angle, all fastening being accomplished with the use of split rivets.

In order to keep the over-all weight of the body down, the hardwood maple tongue-and-grooved flooring is set on specially-designed, light-weight, high-tensile steel cross-sills made of 16-gauge stock. This

(*Please turn to page* 26)

REAR-END construction details. . . . Note the double-doors and tail-gate, the marker-lights, reflectors, etc. . . . The use of cab-over-engine chassis has enabled Mayflower to secure greater load space and keep the over-all length down to the size of 26 ft., 6 in.



1. Fabricating the sides of body.
2. Assembling the roof structure.
3. Installing the side on chassis.
4. Attaching roof to the sides.

provides a practically dust-proof and splinter-free flooring.

The rear doors of the body are also of metal-covered plywood panels, ⅜-inch thick, having metal on *both* sides. Because of the inherent stiffness of these panels, it has been possible to eliminate all door framework, the panel itself forming the complete, full-length door, hung on ¼-inch continuous-pin hinges and fastened with a heavy-duty, 3-point lock.

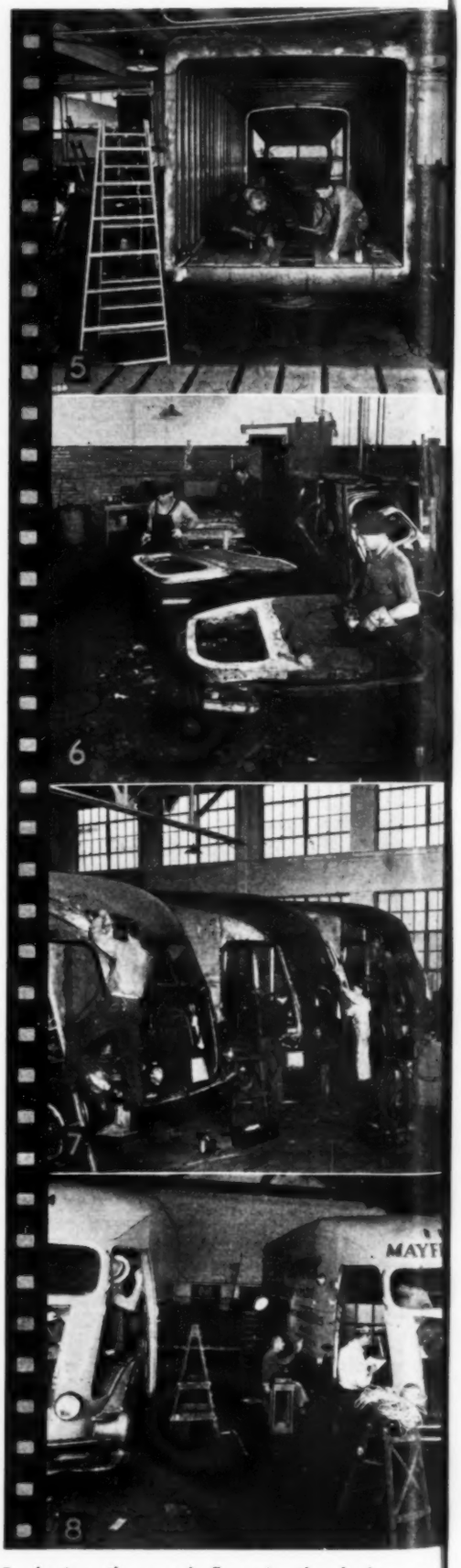
The tail-gate is also made of this same paneling material, but is specially built to ¾-inch thickness, with metal on both sides. All edges are covered with a heavy-duty ⅛-inch metal channel, for reinforcement. The top of this tail-gate is covered with 1/16-inch, four-way tread plate, in order to provide a non-skid surface. The tail-gate is attached to the floor of the body through a ⅛-inch formed threshold-plate and butt-straps. When in the lowered position, the top of the tail-gate is flush with the top surface of the floor. A heavy-duty pipe-and-chain assembly is used for holding it in a closed position. This tail-gate is also illustrated in some of the photographs.

The only curved portions of this body that incorporate the use of metal-covered plywood panels are those occurring where the side-walls curve inward toward the cab doors. All other curved portions (such as front roof stamping and curved roof and vertical corners, the beaver-tail at the bottom of the rear end, etc.) are of formed sheet metal only, without wood backing of any kind.

Through the reduction in the size of the body frames, the cubic capacity of these bodies is somewhat increased over conventional body construction, in which ribs approximately 1¾ inches square are used. This design also results in a material decrease in the weight of the completed unit, over former body types that we have used, and the split rivet method of fastening provides a rigid and almost shake-proof method of joining.

In assembling these bodies, as illustrated in the accompanying photographs, the sides are first fabricated on a special fixture, and then picked up by an overhead hoist, set in place and welded to

(*Please turn to page* 74)



5. Laying the wood floor in the body.
6. How the cab doors are fabricated.
7. Finishing the sheet metal joints.
8. Lettering and the final touch-up.

Pace Setter

a husky that really can step out!

U. S. ROYAL FLEET DELIVERY

EXTRA-HEAVY TREAD FOR LONGER WEAR IN GRINDING STOP AND GO SERVICE

This husky has what it takes! Extra-tough tread to resist the constant stops and starts of door-to-door service; extra-tough body to resist the toll-taking heat developed by high-speed runs (under normal loads) both in and out of town.

Ask your U. S. Dealer to show you this pace-setter and tell you how fleet owners use it to cut their tire costs way down.

(Rayon construction in No. 22 and up)

DEEPER TREAD
Tough, massive tread of thicker Tempered Rubber wears longer.

BUTTRESSED SIDEWALLS
Rugged shoulders are designed to resist curb scuffing, snagging and other tough going.

United States Rubber Company
1230 Sixth Avenue — Rockefeller Center, N. Y.

"Thanks for your

AN INDIVIDUAL

This service is tailor-made! A Socony-Vacuum fleet engineer will make a thorough study of your local operating conditions—your equipment, routes, problems. His recommendations will be shaped to fit your needs...help you save! The case history above is just one among hundreds of fleet lubrication "success stories" in Socony-Vacuum's files.

CALL IN A Socony-Vacuum

ur Personal Interest"

"I WANT TO THANK YOU for your personal interest and *sound advice*; lubrication costs per mile *prove* how much your help has meant."

That's the type of letter Socony-Vacuum Fleet Engineers are getting all the time from satisfied customers who know what they're talking about. This particular letter came from a Minnesota dairy owner, but they pour in from every state and every section of the country.

These letters show—better than anything else—the kind of satisfaction our customers are getting. *Dependable, economical, "correct"* lubrication...plus the personal cooperation of their own Socony-Vacuum Fleet Engineer!

AL ERVICE FOR YOUR FLEET!

1 **YOUR PROBLEM IS ANSWERED!** Nothing is taken for granted, no step is overlooked. Socony-Vacuum's fleet engineer analyzes your fleet by makes and models, for type of service, loads carried, operating temperatures, engine condition, maintenance methods. He then helps your men carry out money-saving operating and maintenance improvements.

2 **LUBRICANTS TO FIT!** Socony-Vacuum's engineers are not guided by guesswork. They base recommendations on scientific tests—select products for *your* equipment from Delvac "500 Series" Oils, Sovac Truck-Bus Oils, Mobilubes, and Mobilgreases.

3 **75 YEARS' EXPERIENCE!** And every Socony-Vacuum fleet engineer has been trained to apply this experience—greatest in the oil business—to help *you* hold maintenance and operating costs to a minimum.

4 **NATION-WIDE SERVICE!** Across the U. S. A., you will find our fleet engineers available to recommend lubricants to meet *all* conditions on your routes. SOCONY-VACUUM OIL CO., INC., and Affiliates: Magnolia Petroleum Co., General Petroleum Corporation of California.

Address Truck-Bus Division
Socony-Vacuum Oil Co., Inc.
26 Broadway, New York City

YOU BENEFIT FROM **75 YEARS'** LUBRICATION EXPERIENCE **1866-1941**

m Fleet Engineer

LOG SHEET FOR BRAKE PERFORMANCE TESTS. PROPERTY CARRYING VEHICLES INCLT.

Location U.S. #1 near Beltsville, Md. Date June 25 19 40 Sheet No. 9 Decelerometer No. 1010 Road: Type Macadam Condition Smooth

Observer J. S. White

Line	1 Carrier's Name	2 Carrier's Address (City and State Only)	3 Carrier Owned	4 ICC Plate Number	5 Motor Vehicle and Body Type	6 Motor Vehicle Make	7 Model	8 Year	9 Truck or each unit of comb. No. of Axles	10 No. of Axles with Brakes	11 Type of Brake Operating Mechanism	12 Reduction Valve for Front Wheel Brake	13 Weight in 100 lbs. Vehicle Weight Unloaded	14 Pay Load	15 Gross Weight	16 Empty or Loaded	17 TEST RESULTS First Trial Speed	18 First Trial Decelerometer reading in feet	19 Second Trial Speed	20 Second Trial Decelerometer reading in feet	21 Third Trial Speed	22 Third Trial Decelerometer reading in feet	23 Remarks
1	Bill Jones Transfer	Boston, Mass.	Yes	165-190	truck stake	Ford	95	40	2	2	hyd.	No		50	96	E	20	25	23	27	22	25	Left rear wheel locked
2																							
3	John Doe Storage	[illegible], D. C.	Yes	75-664	trac.	White	720	39	2	2	air	Yes	109		309								
4				75-654	semi. van	Budd			1	1	air				170	L	20	40	20	45	20	50	Reduction valve off
5																							
6	Mikes Long Dist.	Baltimore, Md.	No	23-752	trac.	International	D-50	39	2	2	hyd.	No	117		117	E	23	49	22	45	22	43	Pulled to left
7				23-750	semi. van	Fruehauf			1	1	vac. mech.		47		47								
8																							
9	Green Mountain	New York, N.Y.	Yes	240-200	truck van	Mack	EH	39	2	2	air	No	76		150	L	20	60	20	55	20	55	Speedometer not working
10				240-201	trailer van	Highway			2	2	h-air		60		120	L							
11																							
12																							
13																							
14																							
15																							

SPECIMEN

FIGURE 1—Sample of the log-sheet as filled out during the brake tests of property-carrying vehicles. A similar one was used for buses.

I.C.C. REPORTS *on* BRAKE TESTS

By Karl F. Walker,

Associate Automotive Engineer
I.C.C. Section of Safety
Washington, D. C.

THE Interstate Commerce Commission has recently completed a series of tests on more than 1,700 commercial motor vehicles and combinations of motor vehicles, made by various members of the headquarters and field staff of the Bureau of Motor Carriers during the latter half of 1940. These tests were made under the general supervision of H. H. Kelly, Chief of the Section of Safety, I.C.C., with H. H. Allen, Mechanical Engineer of that Section, in immediate charge. Abstracts of the report are herewith presented.

The tests reviewed in this report were conducted in thirty states by personnel of the I.C.C. Bureau of Motor Carriers, assisted by state employees. The primary purpose of these tests was to obtain data as to the brake performance of buses, trucks, and combinations of vehicles under customary operating conditions as driven by their regular drivers. The tests were not made for enforcement purposes, although in a number of instances where brake performance was found to be entirely unsafe, the carriers' attention was called to the deficiency; and, in some of the most flagrant cases, vehicles were ordered off the highway for immediate adjustment or repair. Only vehicles bearing I.C.C. identification plates were tested, the work thus being limited to vehicles of common and contract carriers subject to the Commission's jurisdiction.

Experimental tests were first conducted by the Section of Safety on U. S. Highway No. 1 between Washington and Baltimore during June 1940, with the assistance of members of the Maryland State Police, and the Public Roads Administration. On the basis of these first trials, detailed instructions and data sheets were prepared and issued to the safety inspectors of the Bureau of Motor Carriers.

A sample of the log sheet as filled out during the brake tests is shown in Figure 1, for property-carrying vehicles. A somewhat similar one was used for passenger-carrying vehicles.

The brake performance of commercial vehicles and combinations observed in these tests may be summarized as follows:

Buses made the best showing, with slightly more than 50 per cent meeting the I.C.C. requirement of a 30-foot stop (braking distance) from a speed of 20 miles per hour.

In the category of loaded 2-axle trucks, 42 per cent met the I.C.C. requirement.

Tractor-semi-trailer and truck-full-trailer combinations (all weight classes combined) showed a comparatively poor braking performance. In the lowest

weight classes, however (up to 20,000 pounds gross vehicle weight), the performance of these combinations approached closely the I.C.C. requirement.

In general, braking performance decreased as gross vehicle weight increased in 2-axle trucks, in tractor-semi-trailer combinations, and truck-full-trailer combinations. Little change occurred in braking performance as bus weight increased.

Conclusions were drawn from the data upon various points, including: (1) extent of compliance with I.C.C. braking requirements; (2) relation of braking distance to g.v.w.; (3) lack of information on the effects of overloading; (4) enforcement criteria. Observations made during a portion of the tests tend to show: (5) need for maintenance, and (6) for proper selection of power-brake equipment. Recommendation is made (7) for further research.

Numerous tables and charts depicting the data accompanied the report. Figure 2 summarizes graphically much of the data contained in the report.

The instruments used to conduct the brake tests were James decelerometers, one of which is a part of the standard equipment of each of the Bureau's safety inspectors. Each of the decelerometers purchased was calibrated dynamically by the National Bureau of Standards against a fifth-wheel which accurately measured stopping distance.

The instructions to the safety inspectors outlined the necessary equipment and personnel required, the necessary co-operation of state officials and employees, the selection of vehicles for test, the weighing of the vehicles (which was done in most cases by loadometers, weighing each axle separately), and certain precautions for the safety of test personnel, equipment, and other highway users during the tests.

The stations for the tests were located on paved level roads (not over 1 per cent grade) where a large volume of I.C.C. vehicles was to be anticipated. Most of the vehicles were tested with load, instructions to the safety inspectors being to the effect that only a small number of empty trucks or combinations should be tested.

Passenger-carrying vehicles (buses) were tested without passengers in order to avoid injuries; they usually were taken from the carrier's garage without advance notification that the tests were to be conducted. In every case, a regular driver operated the bus, accompanied by the safety inspector; on occasions other representatives of the carrier accompanied the driver and safety inspector.

In all cases, the driver was instructed to stop the vehicle or combination in the shortest distance possible, using only the service brake equipment. No instructions were given as to when or how he should declutch the engine, or at what time he should apply the trailer brakes, if these were operated separately.

The procedure for the actual test on each truck or combination was identical in all cases. The vehicle to be tested was drawn from the stream of traffic by uniformed patrolmen and weighed. The safety inspector then mounted to the seat beside the driver and

(*Please turn to page* 32)

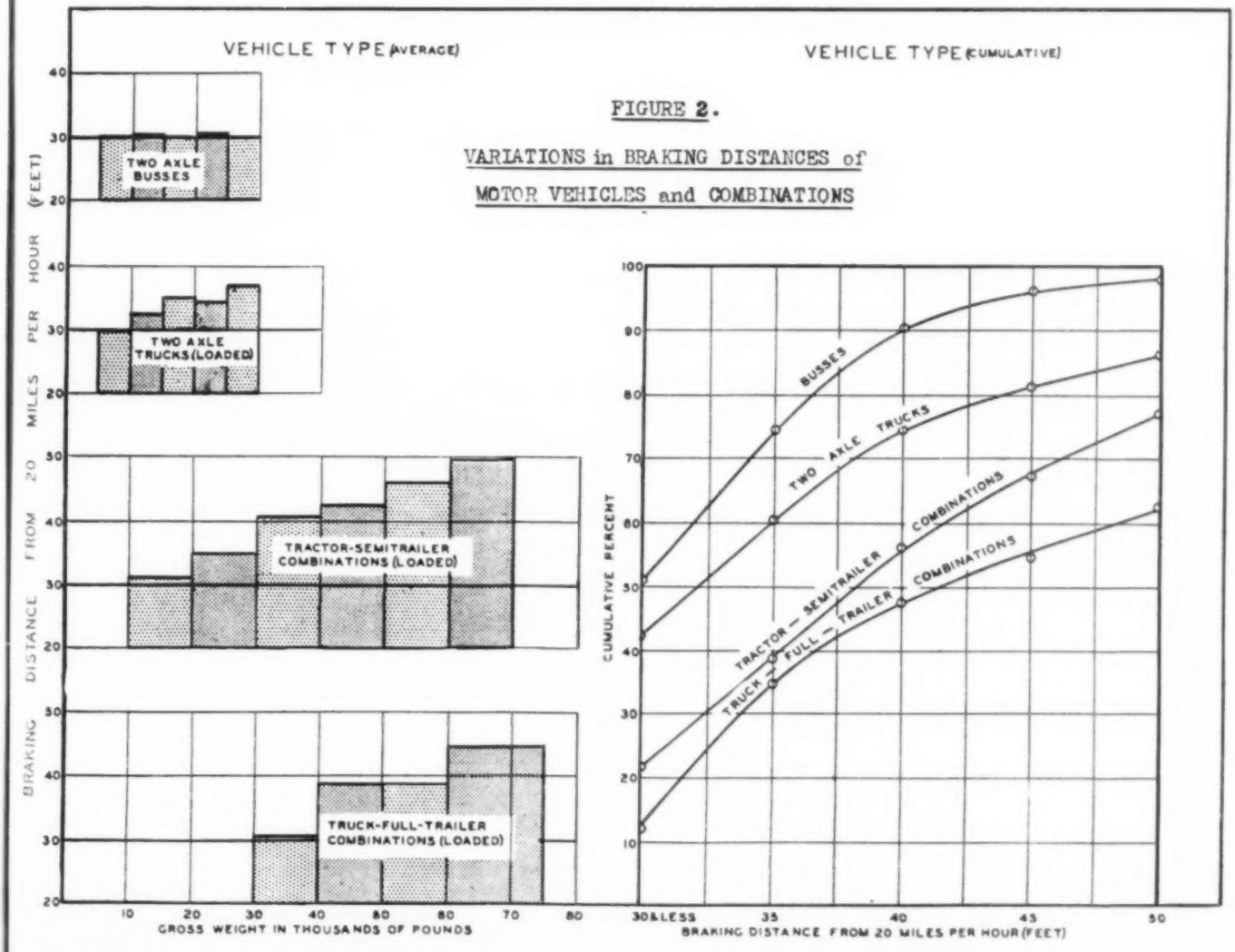

VEHICLE TYPE (AVERAGE)
VEHICLE TYPE (CUMULATIVE)
TWO AXLE BUSSES
TWO AXLE TRUCKS (LOADED)
TRACTOR-SEMITRAILER COMBINATIONS (LOADED)
TRUCK-FULL-TRAILER COMBINATIONS (LOADED)
BRAKING DISTANCE FROM 20 MILES PER HOUR (FEET)
GROSS WEIGHT IN THOUSANDS OF POUNDS
CUMULATIVE PERCENT
BUSSES
TWO AXLE TRUCKS
TRACTOR — SEMITRAILER COMBINATIONS
TRUCK — FULL — TRAILER COMBINATIONS
BRAKING DISTANCE FROM 20 MILES PER HOUR (FEET)

FIGURE 2.

VARIATIONS in BRAKING DISTANCES of MOTOR VEHICLES and COMBINATIONS

placed his decelerometer on the floor. He gave brief instructions to the driver as indicated above, and the vehicle was then set in motion. When it reached a speed of 20 m.p.h., the safety inspector gave a signal to the driver, and the latter made as fast an emergency stop as possible. The decelerometer reading was then noted. Two more stops completed the test, and the safety inspector then was returned to the weighing station in a passenger car, in readiness for the next vehicle to be tested. The tests were conducted in the daytime only and on dry pavement. All of the tests were made during the period between July and November, 1940.

Minimum brake performance as established by the Motor Carrier Safety Regulations, Revised, of the Commission, is as follows, this rule having been in effect since July, 1937:

"BRAKE PERFORMANCE:—Every motor vehicle or combination of motor vehicles, according to its type, shall be capable at all times and under all conditions of loading, of stopping on a dry, smooth, level road, free from loose material, upon application of the service (foot) brake within the distances specified below, or shall be capable of decelerating at a sustained rate corresponding to these distances:

"Vehicles or combinations of vehicles having brakes on all wheels should stop within 30 feet, from a speed of 20 m.p.h. Deceleration in feet per second, per second, to the nearest ½-foot should be 14.

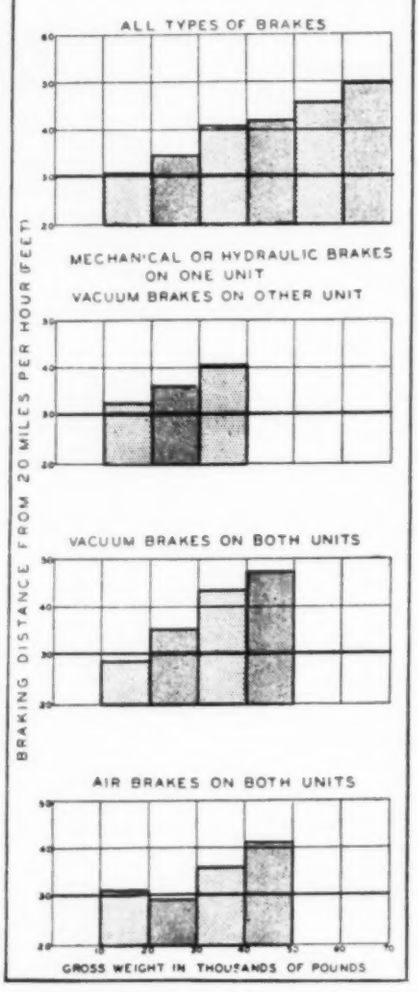
"Vehicles or combinations of vehicles not having brakes on all wheels should stop within 45 feet, from a speed of 20 m.p.h. Deceleration in feet per second, per second, to the nearest ½-foot should be 9.5.

"The means used for enforcement purposes to determine if a motor vehicle or combination of motor vehicles is in compliance with the provisions of the above paragraph, will be by an instrument or a machine capable of being read in feet to stop from 20 miles per hour, deceleration in feet per second per second, or other equivalent units; the manner of use of these instruments or machines to be prescribed for each type of instrument or machine so used."

The 30-foot stop from a speed of 20 m.p.h. is used throughout this report as a basis to which the data are referred, since the percentage of vehicles and combinations tested not having brakes on all wheels (and to which the 45-foot stop would apply) was small.

The requirement for a "30 foot stop from a speed of 20 m.p.h." was derived from work commenced prior to 1933 by the Brake Committee of the Society of Automotive Engineers, and was set forth in a report of that committee which was approved by the council of the Society in 1935; and from the National Conference on Street and Highway Safety (Sec. 124(b) of Act V, Uniform Vehicle Code, 1934). Both of these sources had alternative provisions for vehicles not having brakes on all wheels.

FIG. 3.
EFFECT OF GROSS WEIGHT ON BRAKING DISTANCE OF TRACTOR SEMI-TRAILER COMBINATIONS BY TYPES OF BRAKES


ALL TYPES OF BRAKES
MECHANICAL OR HYDRAULIC BRAKES ON ONE UNIT
VACUUM BRAKES ON OTHER UNIT
VACUUM BRAKES ON BOTH UNITS
AIR BRAKES ON BOTH UNITS
BRAKING DISTANCE FROM 20 MILES PER HOUR (FEET)
GROSS WEIGHT IN THOUSANDS OF POUNDS

The following is a list of the States in which tests were conducted on property-carrying vehicles: Arkansas, California, Colorado, Connecticut, Delaware, Georgia, Indiana, Iowa, Maine, Maryland, Minnesota, North Carolina, Ohio, Oregon, Pennsylvania, Tennessee, Texas and Utah.

As passenger-carrying vehicles were tested out of terminals and garages, the territorial coverage was much greater than on property-carrying vehicles. Passenger-carrying vehicles were tested in 30 States and the District of Columbia.

As stated previously, a small sample of empty property-carrying vehicles was tested chiefly because it was deemed inadvisable to omit empty vehicles from the schedule. Tests on such vehicles, however, are not particularly significant because there is no uniform relation between the brake performance of a vehicle when empty and its performance when loaded. In other words, if vehicles make good stops when empty, they may not do so when loaded, and if they show poor stops when empty, their performance will usually be worse when loaded. The data on empty vehicles and combinations, therefore, is only of incidental interest.

All tests on buses were made without pay passengers, to eliminate the hazard of possible injury to them. The observation just made as to the lack of significance of tests for empty property-carrying vehicles does not apply with equal force to empty buses because, while the ratio of g.v.w. of property-carrying vehicles to their empty weight is generally large—that is from 1-to-1 to 4 or 5-to-1—the ratio of the g.v.w. of loaded buses to the empty weight is practically always between limits of 1-to-1 and 1½-to-1.

The results of the bus tests indicate that the average braking distance of buses (all of which were of the 2-axle type) varied little between weight classes, although the performance of individual vehicles as shown by the range of braking distances may differ widely.

It was also observed during these tests that weight appears to have no material effect on the average

(*Please turn to page* 34)

Drafted for Action!

M-7.3

DE-11

Two Veterans of Years of Service Called Back By Popular Demand!

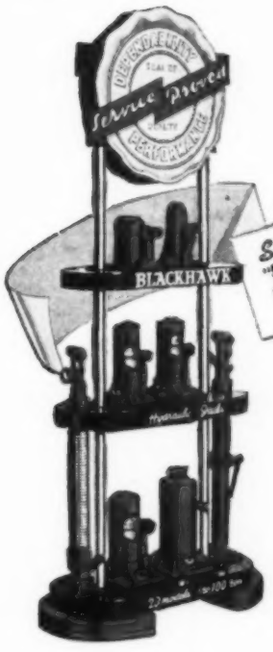
M-7.3 (5-Ton) and DE-11 (12-Ton)

That's right! We put these two rugged lifter-uppers in the "Reserve Corps" — but since trucks and buses are being built so close to the ground—well, we had to draft 'em again.

So here they are — SERVICE-PROVED — just what the doctor ordered for those low-slung, streamlined jobs. The M-7.3, with telescopic DOUBLE lift, is perfect for trucks and buses. Its extremely low height (only 7-5/16") will get under anything on wheels.

The DE-11 will lift any heavy truck, bus or trailer. Equipped with screw extension, giving it that extra 3½" lift, so often needed on those tricky high axle jobs.

Both jacks have *proved* Blackhawk dependability. Only Blackhawks have the Service-Proved seal that guarantees more-for-your-money value. Order from your Jobber Salesman today.



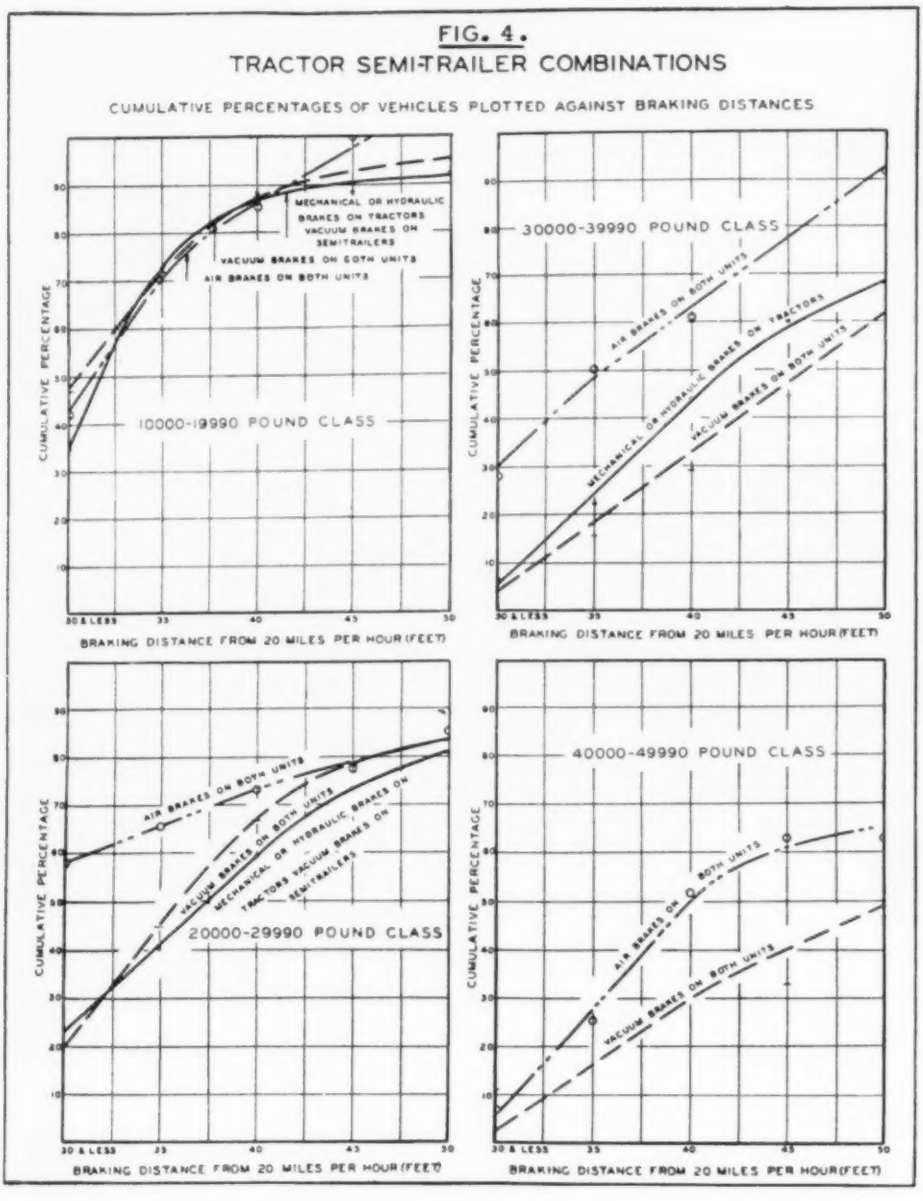
See this display of "Service Proved" Jacks at your Blackhawk Distributor.

THE "*All-American*" LINE-UP for AUTOMOTIVE SERVICE HYDRAULIC HAND JACKS · HYDRAULIC SERVICE JACKS · PORTO-POWER · WRENCHES

A Product of **BLACKHAWK MFG. CO.**
Department J 751 MILWAUKEE, WIS.

BLACKHAWK

FIG. 4.
TRACTOR SEMI-TRAILER COMBINATIONS


CUMULATIVE PERCENTAGES OF VEHICLES PLOTTED AGAINST BRAKING DISTANCES
10000-19990 POUND CLASS
MECHANICAL OR HYDRAULIC BRAKES ON TRACTORS VACUUM BRAKES ON SEMITRAILERS
VACUUM BRAKES ON BOTH UNITS
AIR BRAKES ON BOTH UNITS
30000-39990 POUND CLASS
AIR BRAKES ON BOTH UNITS
MECHANICAL OR HYDRAULIC BRAKES ON TRACTORS
VACUUM BRAKES ON BOTH UNITS
20000-29990 POUND CLASS
AIR BRAKES ON BOTH UNITS
VACUUM BRAKES ON BOTH UNITS
MECHANICAL OR HYDRAULIC BRAKES ON TRACTORS VACUUM BRAKES ON SEMITRAILERS
40000-49990 POUND CLASS
AIR BRAKES ON BOTH UNITS
VACUUM BRAKES ON BOTH UNITS
CUMULATIVE PERCENTAGE
30 & LESS
35
40
45
50
BRAKING DISTANCE FROM 20 MILES PER HOUR (FEET)

brake performance of buses. Slightly more than 50 per cent of the buses tested met the I.C.C. requirement, and approximately 90 per cent showed braking distances within 40 feet. These may be seen by consulting Figure 2.

Figures were obtained which indicated the average braking distance of loaded 2-axle, 4-wheel-braked trucks by g.v.w. class. (See Figure 2). It will be noted that all loaded trucks showed an increase in average braking distance as the g.v.w. class increased. The lightest class (5,000 to 9,990 lbs.) was the only one in which the average performance met the I.C.C. requirements.

Also shown in Figure 2 is the brake performance of the same loaded 2-axle, 4-wheel-braked trucks on a distribution basis. Slightly more than 40 per cent of the 2-axle trucks met the I.C.C. requirements (30 feet), while approximately 75 per cent could stop within 40 feet.

The average deceleration of 15 of the seventeen 3-axle trucks encountered during the course of the tests was 38.8 feet from 20 m.p.h., with a range varying from 26 feet to over 75 feet. Two of the vehicles could not stop within 75 feet. Three of the vehicles met the I.C.C. requirement. The vehicles ranged in g.v.w. from 16,100 to 35,200 lbs., the average being 23,240 lbs. The sample of 3-axle trucks was not sufficiently large to justify display of the data in either tabular or graphical form.

Tabulated results of the braking tests on loaded tractor-semi-trailers were also made, and are shown in graph form in Figures 2, 3 and 4. Considering these tractor-semi-trailers without regard to type of brake equipment, it is seen that only the lightest weight class (10,000 to 19,990 lbs.) was able to approximate the I.C.C. brake requirements, and that as the gross vehicle weight increased, the braking distances became greater. About 21 per cent of all the tractor-semi-trailers tested were able to meet the I.C.C. brake requirements.

Comparisons among the three principal types of brake equipment (see Figure 3) are more feasible for tractor-semi-trailer combinations than for other classes of vehicles and combinations observed in these tests, because of the larger sample of tractor-semi-trailers observed, which makes the data derived therefrom more significant statistically, and because of the wider distribution of the various types of brake equipment in this sample. Accordingly, these comparative data are also included in our tabulations. It is recognized, however, that due to the varieties of types of brakes with which the individual units of such combinations are equipped, there can be no complete assurance that all of the observations were distributed in the proper categories. For this reason, it is not possible to draw definite conclusions from the data on the comparative performance of various types of brakes, and the observations here presented are only tentative.

The data tend to show that there was but little difference in performance between tractor-semi-trailer combinations with vacuum-operated brakes on one unit, and those with vacuum-operated brakes on both units. In both cases, braking distance appeared to increase as g.v.w. increased.

The data also tend to show that in all g.v.w. classes except the lightest (10,000 to 19,990 lbs. in which the

(*Please turn to page* 74)

LEST WE FORGET

THESE are fateful hours. Men and machinery must meet the urgency of the nation's crisis with more speed and more production.

Cotton in its thousand forms is a bulwark of National Defense. For instance: A new cotton yarn developed from THE BIBB HR Bonded Fiber Process has for the first time successfully met and exceeded the performance of the finest imported linen in parachute harness, gunner's belts, and other equipment which constitutes strategic material for our Air Force.

THE BIBB is in the business of turning vast quantities of cotton into materials which are largely used by American Industry, some that are now vital to National Defense, but most of which bring beauty, comfort, convenience and safety to your daily life.

Modern armies move on motorized equipment. The tires carrying this equipment must withstand new strains and stresses. Bibb HR Bonded Fiber Cord is the strongest and longest-lived tire cord yet developed for heavy duty performance—or for safety from blow-out.

In the past few years, THE BIBB has ploughed back millions of dollars into plant expansion and into the newest and most modern machinery available. As a result our ten large mills are keyed to a new high in production efficiency.

Modern wars are won in the factories . . . by the skilled men and women who make up The Army of Production.

We of THE BIBB, eight thousand strong, are ready for the job . . . with the skill and the traditions handed down by our fathers . . . and their fathers, since 1876.

Business as UNusual

With vast production facilities, in top condition of modern efficiency, we anticipate no difficulty in continuing to serve our customers but . . . lest we forget . . . the needs of National Defense must come first—the adequate equipment of our Armed Forces is the best possible protection for you—for all of us . . . 'til Peace On Earth again becomes a living fact.

BIBB MANUFACTURING COMPANY
MACON, GEORGIA

NEW YORK · CHICAGO · PHILADELPHIA · AKRON

BIBB
The First Name in
TEXTILES

HOW SHALL WE SELECT OUR

OILS *and* FILTERS?

asks

A. Maintenance Mann

THE following letter, addressed to the Editor, since it is so typical of the many that are received by this publication, is being presented as an anonymous, open letter, for reasons that are obvious. We quote "Mr. A. Maintenance Mann", which is *not* his name, of course. Neither are the names of the products mentioned the actual ones contained in the original communication:

"We operate a fleet of tractor-semi-trailer combinations, hauling from 8 to 12-ton loads, serving about 500 retail stores within a radius of 70 miles. One of our most perplexing problems seems to hinge around the proper fuels and lubricants to use, in order to obtain 'new motor' efficiency at all times.

"In addition to our rolling stock, we operate a large Diesel-powered electric generating plant, and are confronted weekly—yes, daily—with oil and fuel salesmen from different companies, all of whom claim that their particular product is superior to all others.

"Frankly, I am becoming 'fed up'—right to the neck—with listening to all of the claims of all these salesmen, and I am trying in every way I can to center my buying of oils and fuels in the hands of *one* company, thus making them 'responsible' for the top efficiency of our equipment.

"I hate to take up your valuable time with my problem, but if you really knew how earnest I am in trying to shake out the chaff from all the chatter, and to determine the *one* and *best* company from which to obtain our gasoline, oils and Diesel fuel, you would better understand my position.

"Naturally, we are very busy within our own organization, and don't like to be bothered with the multitudes of petroleum salesmen that come in, but we try to treat all of them with respect and give them all an audience, at least, before passing judgment.

"Whatever make of fuel and lubricant that we might consider, we are bound to hear many uncomplimentary and unfavorable comments regarding same. So what are we to do? We are not so much interested in the cost *per gallon* of the fuel or lubricant, as we are in the net cost *per mile*, or per hour, at the *end* of the year.

"We have had companies offer motor oils to us as low as 35c per gallon, and as high as 75c per gallon, and realize that any savings to be made are not necessarily made from original cost alone, but in how efficient the performance is and in the condition of the motors after a long period of operation. So you see, we are not 'price' buyers.

"Take for instance, our experience with the stationary Diesel power-plant. We started running this 80 h.p. Diesel engine in August, 1940, using a prominent make of Diesel fuel and another well-known brand of heavy motor oil. We ran 300 hours in August, using 750 gallons of fuel-oil and 25 gallons of lubricating oil. In September the performance was the same. But in October our fuel consumption went up to 1,150 gallons while the oil consumption remained the same.

"Immediately we suspected pretty nearly everything, and could not understand the large increase in fuel consumption, when the load, hours and running conditions were exactly the same. At about this time a salesman for the XYZ Oil Company called on us and explained the marvelous power of his extra special extreme pressure motor oil, designed especially to correct the condition we had experienced. He explained that his oil was a specially-treated Diesel oil, with two chemical additives which would dissolve all gum, prevent sludging, and remove and keep out carbon deposits.

"In my desperation I filled our Diesel crankcase with this oil on the 1st of November, and during that month it pulled our fuel consumption right back to 750 gallons, while the lubricating oil consumption remained the same. The months of December and January have also been very close to these marks.

"Of course, I should feel pretty good after having obtained such satisfactory results, yet I'm scared stiff that the new oil might corrode or otherwise damage the bearings of the Diesel engine, or do something of far greater detriment to our engine, because of the chemical additives in the oil. At least, that is what the salesmen of many different oil companies are trying to lead me to believe.

(*Please turn to page* 38)

STRAIGHT TALK about "NEW MODELS"

• THERE ARE, of course, two ways of bringing out "new models" in Truck-Trailers, as in a great many other products.

First, there's the *annual* method, under which all the engineering department's accomplishments are saved up to permit a "Big Announcement." That's fine, of course. The New Model does represent progress. But it may also represent a strong effort just to be different from the old model.

Then, there's the *week after week* method—which happens to be the Fruehauf method. Week after week—the whole year round—the Fruehauf research engineering department is developing new features—and refining old ones—to make Fruehauf Trailers more economical, safer, faster, more efficient. And as soon as these new features are thoroughly tested and proved, they're incorporated in our standard design . . . not next season, but *now!*

As an example of this constant development, take the Aerovan—leading seller the country over. In spite of its popularity from the start, improvements have gradually been added until now—

- **Payload rating is 1,000 pounds greater than formerly.**
- **Springs are stronger, yet more flexible for easier riding.**
- **One of the rubber-mounted radius rods is quickly and easily adjustable to provide hair-breadth alignment of under-structure.**
- **New Vertical Supports provide positive protection in the event of accidental uncoupling. Front of Trailer cannot "nose-dive."**
- **Supports have a two-speed transmission which provides either rapid or slow movement of the telescoping seamless steel tubes. The loaded Trailer can be raised with ease.**
- **Under-frame cross-members have been strengthened without sacrifice of desirable weight savings.**
- **Tubular-strut body framework has been reinforced at points where strain is greatest.**

That's why you seldom read a Fruehauf "announcement." That's why experienced Trailer buyers always get the Fruehauf story first . . . they know that the current Fruehauf models are *always New Models!*

WORLD'S LARGEST BUILDERS OF TRUCK-TRAILERS SALES AND SERVICE IN PRINCIPAL CITIES

FRUEHAUF TRAILER COMPANY • DETROIT

Factories: Detroit, Kansas City, Los Angeles, Toronto

FRUEHAUF TRAILERS "ENGINEERED TRANSPORTATION" —Reg. U. S. Pat. Off.

"And now we find ourselves in a dilemma and don't know what to believe. The makers of the Diesel engine in question seemed unwilling to commit themselves by recommending any one brand of fuel or oil, and we apparently have reverted to the 'trial and error' method, and have become the 'guinea pig', possibly to pay for the errors of someone else later on.

"However we are reasonably safe in believing that the motor oil which *did* produce such good results with our Diesel engine, accomplished the job in accordance with the promises of the salesman. The reason why this engine lost so much efficiency in the first place was probably due to the piston rings having become stuck with gum, carbon, sludge and such. We are willing to grant that the change in type of motor oil corrected this condition by freeing up the rings, thus restoring the compression in this Diesel engine, and hence bringing its fuel efficiency back around normal.

"We should feel quite tickled with these results, but we hear *so* many comments regarding the oil we are now using, mostly from competitive oil salesmen, that we are turning to our favorite fleet publication to set us right. The question is, are we safe in using this oil, which seems to have drastic solvent and detergent properties, and which other people claim might be harmful to the bearings, etc.?

ADMITTING that oil-filters do a thorough job of removing most sludge, carbon and other harmful materials, this fleet man asks "What about specially-treated oils?" . . . He is seeking the right combination of oil and filter and presents his problem in a most interesting and frank manner. . . . You'll find it good reading.—Ed.

"In connection with lubricating oils for our gasoline engines, a new problem has developed, on the question of filters. Naturally, we have been using oil-filters on all of our gasoline engines, ever since the advent of the 'modern' type of filter, some five or six years ago. We have used both the cotton-waste element type, as well as the Fuller's Earth type; both with satisfaction. After reading so much meaty and interesting material in FLEET OWNER on the subject of oil and filters, we have become thoroughly sold, and our experience has proved that your magazine was right in the excellent work which it had done to make us 'filter-conscious.'

"In making our initial filter tests about five years ago, we took one of our fairly new gasoline-powered 3-tonners, used as a tractor, pulling a heavily-loaded trailer in city delivery work, making many stops per day. Sludge had become rather troublesome on this job, although we hadn't known very much about 'varnish' at that time; in fact, we doubt whether the word was invented at that early date. We also had a few sticky valves, but the motor had only run but 10,000 miles and was in good condition, otherwise; that is, it burned little oil, gasoline mileage was fair, but we had to change the oil pretty often, by which we mean every 1,000 miles or even less, because it dirtied up quickly.

"At that time many of the filter people were urging no-oil-change practices, and we thought we'd try this out, to see how long we could get away with it. Immediately after the installation of the filter, cartridges were changed every 250 miles, for the first 1,000 miles. So far as we could *visibly* observe, the oil gradually cleared up and after the fourth cartridge had been put in, we could not tell the used oil from new oil. After this we changed cartridges at intervals of from 1,000 to 1,500 miles, and we ran the job this way—strictly as a test—for about one year, or about 20,000 miles. Of course we had to add a little new oil, now and then, but consumption did not increase and no more valves stuck, after initially freeing them up with a suitable penetrant.

"In trying to determine whether or not we were on the right track, we had an oil analysis made after the first six months, and found that the viscosity had increased very slightly, which we later offset by adding oil one grade lighter. Other specifications (which meant very little to us, anyway) did not vary greatly, and any changes were explained by the laboratory as actually *improving* the quality of the oil, rather than injuring it. Since we were always careful to run our motors warm, through the use of thermostats, shutters, etc., (which we learned from reading FLEET OWNER), we experienced no trouble from excessive dilution of the oil.

"In other words, the analysis showed that we had acted safely in running on the same oil for the first six months, and for test purposes we continued it for a year. At the end of the year we tore down the motor—the first time it had been taken down—in order to check up for wear. Before the test, this truck had the very low speedometer reading of 10,000 miles. The test period ran another 20,000 miles, making our total reading about 30,000 miles.

"Upon tearing down the motor at this point, we found about .004" wear on cylinder walls and about .001" wear on pistons; the piston rings and valve-stems were worn slightly, but no gum was on them. Main bearings did not need any adjustment, and there was only about one-half thousandth wear on the connecting-rod bearings. Other parts such as camshaft, timing gears, etc. looked perfectly normal, with little

(*Please turn to page* 77)

How a Shop Screwball Got Himself in the Groove

1 Yeah, the screwball was me. This outfit buys every size and make of rig on the market. Brake materials — I'm buying hit or miss to try to fit all my units. Mileage and cost records? Hopeless!

2 To make things more screwy, my buying is scattered. I've got to listen to every salesman that comes in. That takes so much time I don't know how I ever had a chance to run the shop.

3 One day I hear a guy say something about American Brakeblok's 3 types of heavy-duty brake linings—a type each for manual, vacuum-booster and air brakes. He tells me about their Advisory Service.

4 We send a form he has to American Brakeblok about our equipment, type of brakes, loads, routes, operating conditions. Back comes recommendations from engineers for every one of our units.

5 I advise anybody working with brakes to write American Brakeblok. It's almost peaceful around our place now. Sales calls are down. Costs are down — and tell a knock-out story—so knock-out that the Boss and I often find time to watch the home team knock out a home run.

Copyright, 1941, The American Brake Shoe & Foundry Co.

American Brakeblok

BRAKE LINING

AMERICAN BRAKEBLOK

NAPA Approved Automotive Parts Association Assurance of Quality

Master Stocks in 38 NAPA Warehouses. Jobbers everywhere give prompt service.

3 HEAVY-DUTY TYPES

EACH BEST FOR ITS OWN JOB

American Brakeblok Division of The American Brake Shoe & Foundry Co., Detroit, Michigan

215 FLEET OPERATORS GIVE THEIR LATEST EXPERIENCES WITH

FOG, DRIVING *and* SPOT-LITES

By H. Clay Fischer, Editor

CONSIDERABLE difference of opinion seems to exist among fleet operators on the subject of fog-lights, with reference to their actual effectiveness in fog. In fact, many fleet men point out the established scientific fact that no known visible light rays will penetrate fog. And, because actual night-driving hours in adverse weather are *relatively* few in most parts of the country, many of these same fleet men lean towards the use of a good driving-light, mounted as low as possible, with clear lens (instead of amber). They tell us that a good driving-light works swell in clear weather, and is *pretty* effective in snow, rain, fog, etc., and rather than use *two* different lights, they prefer the one that provides greater all-around utility.

That, briefly, was one of the highlights of our recent survey on the subject of auxiliary lighting equipment, embracing driving, fog and spot-lights, the questionnaire having appeared in our February issue of this year. Replies were received from 215 fleets located in all sections of the country, and representing practically every type of business that uses a fleet of motor vehicles, including bus and taxicab operators.

That considerable interest is being shown in this subject of auxiliary lighting equipment is reflected in the fact that 37 out of these 215 operators who reported, are at present using no auxiliary lighting equipment of any kind, but in returning our questionnaire these 37 fleet men indicated that they wanted to know what the "other fellow" was doing, and emphasized their desire for a copy of the finished survey, which by now has been sent to them, along with

the others. You fellows who did not participate will have to be satisfied with the brief resumé which follows:

Fog-Lights: These are used, on some or all vehicles, in 111 out of 215 fleets. Fog-lights are installed on *all* vehicles in 23 of these fleets. The balance use fog-lights on from 5% to 90% of their vehicles, in varying percentages, the popular figure being about 50%.

Driving-Lights: These are used, on some or all vehicles, in only 61 out of 215 fleets, and are installed on *all* vehicles in but 8 fleets. The balance use driving-lights on from 5% to 90% of their vehicles, in varying percentages, the popular figure being about 5%.

Spot-Lights: These showed up pretty well; in fact, better than we had anticipated. Out of 215 fleets surveyed, 82 operators are using them on some or all of their vehicles, and 10 fleets are 100% spot-light equipped.

It seems that spot-lights are proving popular with over-the-road truckers for reading road-signs; public utilities use them for line-construction work at night; highway departments for snow-plowing, etc.; retail-delivery fleets for locating correct house numbers and street signs. And, fleet men tell us, when spot-lights are not actually being used, they are turned back so as to shine against the front of the truck or trailer body, illuminating the name of the firm and providing a certain amount of advertising value, which (if you have a good generator) seems to be a very effective and inexpensive form of advertising.

Getting back to the controversy of amber vs. clear lens, some "light" might be shed on the subject from our first question, which asked *"In your opinion or experience, which type of lamp gives best all-around lighting in fog, snow, rain, etc.?"* . . . The answers were "Fog-Light with Amber Lens"—69; "Driving-Light with Clear Lens"—64; "No answer"—82. . . . And opinion still seems to remain divided, although from our own personal experience with amber lamps, the latter appears to offer certain definite features that a clear lens does not give.

Far be it from *us* to start an argument with anybody, so just forget about our personal opinion, won't you? Rather, give a bit of thought to the opinions of people who have made a study of lighting equipment for many years. We talked to several such gentlemen. One states definitely that while an amber lens reduces the intensity of the light, it also gives out a light that has less tendency to be reflected back at you, when projected into fog, rain, etc. . . . Another authority tells us that the trick is to mount the light (amber or white) *low* enough, so as to get *under* the fog. . . .

Still another expert on the subject claims that because an amber light is a different color than a clear light, it is more visible (to the oncoming driver) in a fog than a white one would be, and that there is less tendency for this particular color of light to be diffused by wet pavements, etc. . . . A fourth gentleman says that amber is good, but that red is even better—but try and use red without having the cops after you.

One of the most sensible-sounding definitions (again in our opinion) comes from a man who claims that the problem can best be solved by mounting the light low and directing it straight ahead—either white or amber—thus sending out rays in front of the vehicle on a plane much *below* the average eye-level. Thus, he says, any tendency of the fog or rain to reflect the light back, will effect such reflection against the road under the vehicle, or the bumper, and *not* into the eyes of the driver, permitting him to see as much as the human eye can absorb under such a condition of rain, fog, etc.

And that's all we are going to say on the subject. Anyone having other theories, or knowing additional facts, is cordially invited to write us a letter, which we shall be glad to publish if we consider it to be based on reasonable logic. So far as white or amber is concerned, you can shut your eyes and take your pick, remembering that 69 fleet men choose amber, 64 picked white, and 82 remain on the fence.

Our next question asked, *"On what basis do you select fog-lights and driving-lights?"* and the answers were: "Lighting Performance"—117; "Quality Construction"—47; "Low Upkeep Cost"—17; "Low First-Cost"—7. . . . All of which proves that more "light" is wanted on the subject, and pardon the pun.

Like everything else, lighting equipment must be checked occasionally. In answer to the question, *"How often do you check and inspect such lights?"*, the following periods were given: "Daily"—51; "Weekly"

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SPOT-LIGHTS showed up pretty well in this survey, in fact better than we had expected. . . . Out of 215 fleets surveyed, 82 operators are using them on all or some of their vehicles. . . . Over-the-road truckers find them handy for reading road signs; public utilities for line construction work at night; highway departments for snow-plowing, etc.; retail delivery fleets for locating correct house numbers and street signs.

SOME TRENDS IN NEW
1941 LEGISLATION AND HOW
THEY AFFECT YOU AS HIGHWAY USERS

LEGISLATIVE OUTLOOK

•

By Chester H. Gray,
Director,
National Highway Users Conference,
Washington, D. C.

AT the end of the first three months of the legislative year, 18 regular and one special state (Utah) sessions have adjourned, without appointing a day on which to appear or assemble again. Several other states will also shortly close up legislative shop. Florida convened on April 8th. The volume of bills is running ahead of former years. States which have already adjourned are: Arizona, Arkansas, Georgia, Idaho, Indiana, Maryland, Montana, Nevada, New York, North Carolina, North Dakota, Oregon, South Dakota, Tennessee, Utah, Washington, West Virginia and Wyoming.

Substantial gains to highway users have been secured in the field of size and weight limits. Three more states have given the people the opportunity to vote at the next general election on constitutional amendments dedicating highway-user revenues to road purposes. Threatened gasoline tax increases in several states have not materialized thus far. Truck license fees have been revised in a few states.

Compensation for motor vehicle accidents, local sharing, toll roads, legislative study commissions, and restrictive limitations on highway transportation are live issues in more states than usual. There is active interest in defense highway needs and traffic problems.

Size and Weight Limits: Of outstanding importance is the trend towards raising size and weight limits in harmony with the recommendations of the American Association of State Highway Officials. Removal of highway bottlenecks was initiated by Tennessee which increased its gross weight limit from 24,000 to 30,000 lbs. Texas followed by abolishing its 7,000 lbs. load limit in favor of scientific standards using the formula of 700 (L plus 40) with a maximum gross weight of 38,000 lbs. Georgia adopted the A.A.S.H.O. recommendations. A new Vermont law substitutes 650 lbs. per inch of tire width in lieu of a 16,000 lbs. axle limit. Limits conforming more closely to the A.A.S.H.O. recommendations and regional standards have been enacted in Arizona, Indiana and North Dakota, but similar bills died in North Carolina, Oregon, South Dakota, Washington and Wyoming. A South Dakota law permits overlength and over-weight operations in order to furnish transportation facilities to communities where service has been abandoned by the railroads.

Remedial action in current legislatures focuses attention on the remaining bottleneck states such as Kentucky and Alabama whose legislatures are not in session this year.

Anti-Diversion Amendments and Local Sharing: Proposed constitutional amendments to protect the

(Please turn to page 80)

LARGER, SAFER LOADS

In the New Aero-Mayflower Met-L-Wood Semi-Ribless Van

The newest addition to the large fleet of modern vans used by Aero Mayflower Transit Company, nation-wide furniture movers

EQUIPMENT of the most dependable type is required by such firms as Aero Mayflower Transit Company in their nation-wide furniture moving service. Since 1930 they have been adding Met-L-Wood bodies to their fleet, because of their thorough satisfaction in service, low maintenance and efficient design.

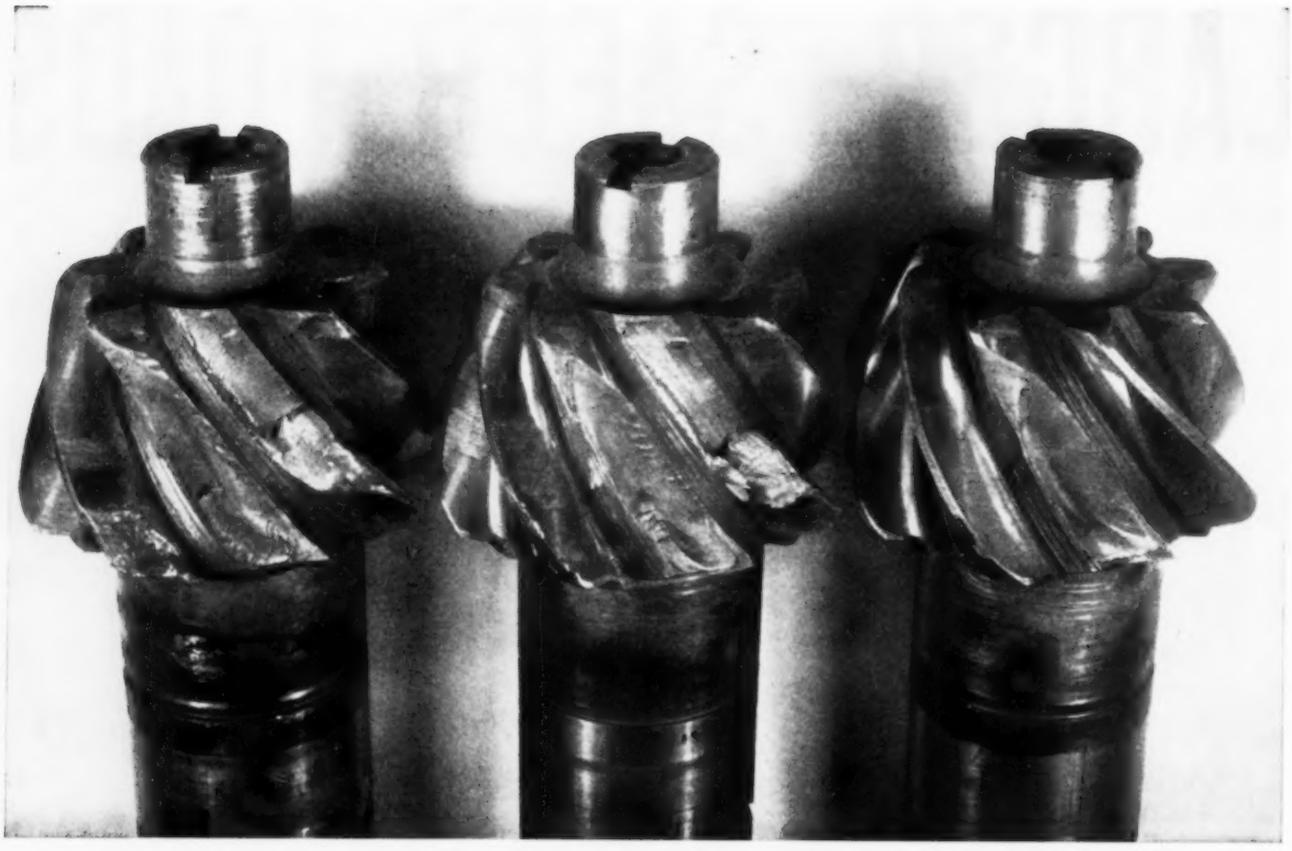
Illustrated is the latest addition—the new semi-ribless van, mounted on a D-500 cab-over-engine International truck chassis.

Met-L-Wood Semi-Ribless construction employs 3/8" Met-L-Wood panels, metal on both sides of a strong plywood core, for the side walls. These panels, reinforced with a light pressed steel shape, run horizontally, giving added strength, while permitting maximum load space inside the van. All curved sections made of 16 gauge steel, parts fastened by Met-L-Wood patented split rivet method. The roof of this van is of 3/8" Met-L-Wood—metal on the outside only.

Met-L-Wood Corporation builds bodies complete or furnishes you with parts ready for your own assembly. Write us today for further information about modern, efficient van bodies.

MET-L-WOOD CORPORATION

6755 W. 65th Street - - - - - - Chicago, Illinois



THREE pinions which failed due to bending fatigue, caused probably by excessive torque and/or faulty adjustment.

WHY REAR-ENDS FAIL

•

By F. W. Parker, Jr.

Service Manager,
The Timken Detroit Axle Company,
Detroit, Mich.

THERE may be some difference of opinion as to just what is meant by gear and pinion failures, but for the purpose of this discussion, failure is taken to mean any gear or pinion condition which, according to good maintenance procedure, calls for replacement of the elements involved. This includes gear tooth wear as well as distorted and fractured teeth. The following attempt at "failure analysis" may shed some light on this subject:

Basic Causes of Failure: The causes of rear axle ring-and-pinion gear failure may be classified under five general headings, as follows:

(1) Overloading due to abuse, unpredictable impact loads, and sustained operation at capacity loads during the critical break-in period.

(2) Inadequte or unsuitable lubricant used in the axle housing of the job.

(3) Abrasive foreign matter carried into the gear teeth, from the air or from the gear lubricant itself.

(4) Improper mounting, such as incorrect adjustment, alignment, shaft deflection and inadequate tooth contact.

(5) Defective related parts, such as bent shafts, worn bearings and inadequate clearances.

Types of Failure: Gear teeth in service are required to resist bending stresses, shearing stresses, compression stresses and abrasion under compression.

Their failure may be attributed to one or any combination of these factors, and the appearance of the gears when removed from the drive assembly will usually indicate the reason for failure.

Bending: It is very seldom that a gear tooth failure may be attributed directly to shear alone, and it is not common for a tooth to fail in bending from a single excessive overload. Bending failures are usually progressive fatigue failures which start when

the endurance limit of the gear tooth material is exceeded. Further applications of load of the same or nearly the same magnitude finally start a microscopic crack which is gradually extended until it becomes visible.

Once such a crack starts, it progresses consistently until the tooth is so weakened that a complete fracture occurs.

Compression: A gear tooth has failed even though it retains its initial shape if its contacting surfaces have become so roughened that it becomes extremely noisy in service.

Several terms have been used in connection with such a tooth failure. These are: scuffing, scoring, pitting and galling.

What actually happens in such cases is that the tooth fails under compression fatigue, or because the lubricant film between mating teeth has become broken. A broken lubricant film is due either to excessive overloads over the entire tooth contact area, to concentrated loads on a limited portion of the proper contact area, or to the use of a grade of lubricant that is inadequate.

When the lubricant film is broken, actual steel-to-steel contact under high pressure occurs. Local surface temperatures mount rapidly because of friction, until the surface metal of the gear tooth is heated to the point where it becomes plastic and the surfaces of mating teeth actually weld together momentarily. As they separate, particles of the tooth surface metal are torn out and the surface becomes badly roughened.

TWISTED keyway, due to loose companion flange and poor contact on taper.

THE teeth of this gear were scuffed on the drive side, two teeth were broken out completely and the rest were cracked in fatigue, due to excessive overload and high load concentration.

Once roughened in this way it is practically impossible to maintain an unbroken lubricant film thereafter, and the scuffing becomes progressively worse. If allowed to proceed, scuffed gears get noisier and noisier.

Abrasion: Pure abrasion, that is, the condition where gear teeth are worn equally over their entire contour to the point where chordal thickness is dangerously reduced, but where the lubricant film has been maintained, is the result of foreign matter acting as an abrasive between the mating teeth.

Enumeration of the principal causes of gear failure automatically suggests remedies for the prevention of such failures. For instance, excessive overloads must be avoided. An adequate amount of suitable lubricant must be provided. Foreign matter must be excluded from the gear housing.

Gears must be properly mounted and inspected regularly to detect defective related parts. Correct bearing adjustment must be maintained. A program of adequate maintenance and careful inspection will eliminate most gear failures and assure maximum service life of gears.

Lubri-Coting: In connection with the proper lubrication of rear axle gears, attention is called to

(*Please turn to page* 46)

TYPICAL case of bending fatigue, resulting in complete fracture. Tooth contact was heavy over the entire length of the tooth on the drive side.

the process called "Lubri-Coting," which consists of electro-plating the gear teeth, after lapping and mating, with a ductile, non-ferrous metallic coating, which serves as an initial or "break-in" lubricant. The depth of this metallic layer is from .0003" to .0005".

This treatment serves as a solid load-distributing lubricant, and provides a defense against gear failure, especially in the first few thousand miles of vehicle operation. It is a very effective means of extending the life of gears in heavy-duty service and eliminates any danger to gears when putting the new vehicle to work at once.

Before applying this protective finish, the surfaces of the teeth are file-hard and as smooth as it is possible to get them by lapping. Nevertheless, these surfaces, when viewed under a high-power microscope, show slight irregularities which no machining process can avoid. These surfaces appear to be wavy and covered with scratches.

The carburizing process, done before the final finishing, leaves the tooth surface with a hard case, rich in carbon, to withstand abrasion, while leaving the tooth core somewhat softer but very dense to withstand the bending and shearing stresses encountered in service.

In spite of its extreme hardness, the case metal does have some ductility and is therefore capable of being still further hardened by "cold working." This is an effect obtained in actual service where pressure increases the density of the metal on the tooth's surface and causes slight changes in structure which result in greater resistance to abrasion and friction.

Maximum gear life requires that the process of cold-working proceed without scuffing or spalling during the vehicle's initial period of operation while the tooth surfaces have not yet quite reached their greatest degree of hardness and smoothness.

The Danger of Metal-to-Metal Contact: When one metal surface is rubbed against another, the resulting friction generates heat. When friction occurs in a bevel gear and pinion set as the result of an imperfection in the surface of one of the teeth, temperatures may rise to the point where the hardness of the tooth surface is reduced.

This may cause a condition commonly known as "picking-up" in which particles from the surface of one tooth adhere to the surface of the mating tooth. If the gear set has an even ratio, failure of the imperfect tooth may quickly take place. If the gear set has an odd ratio, the gear has a "hunting" tooth, and scoring of all the gear teeth may result.

Concentrated Loads: To prevent the occurrence of this condition, metal-to-metal contact must be prevented. Contacting surfaces must be cushioned by a film of lubricant. This is possible only when they are smooth enough, and pressures are held low enough, to prohibit puncture of the lubricating film. It is obvious that if the entire load is supported by a limited contact area, load concentration will be sufficient to break through the lubricating film, causing irreparable damage of tooth surfaces.

While the waves and scratches on a tooth surface which cause this failure are microscopic in size, their effect is nevertheless often disastrous. And since their presence cannot be entirely eliminated in the most accurate machine practice, the Lubri-Cote process has been devised as a means of nullifying their effect.

By allowing high spots to be gently worn away before abrasion can occur, it produces tooth surfaces on both the gear and pinion which are polished to maximum smoothness and work-hardened to an extremely durable state.

The metal used for Lubri-Coting gears is, of course, far more ductile than the steel of the tooth surfaces themselves. Under operating pressure it is squeezed and spread over the tooth surfaces and flows into adjacent lower areas. By building up these lower areas and forcing them to carry their share of the load, a greater contacting surface is obtained and concentration of load is prevented. Full allowable contact between teeth is maintained and the lubricating film, providing a proper grade is used, is preserved.

Irregularities are gradually removed until eventually even the Lubri-Cote material itself disappears.

(*Please turn to page* 69)

Make SHORT Runs Earn LONG Profits

Short runs! Difficult roads! Hills that demand creeper gears! Time-consuming starts and stops! Frequent loading and unloading! *These* are the things that burn up time, tear up schedules, eat up profits.

The Outside Frame Trailmobile can help you eliminate these expensive disadvantages of short-run operations. Pull them out of the red! Turn them into money makers! *Because* Trailmobile has light weight. Hundreds of unnecessary pounds have been removed through scientific design of every part. Yet the safety factor is high. Each part now contributes to the strength of the entire structure. There is no dead weight, no lazy metal used for reinforcement.

All Trailmobiles pull easily because the suspension parts are jig-assembled to fit accurately and make the unit track perfectly. They're fuel savers under all load and road conditions.

The Outside Frame Trailmobile is built in sizes to suit your needs. Find out how it will help you earn longer profits on all runs. Write or 'phone to company headquarters or to the nearest Trailmobile office. A transport service man will call with all the details.

TRAILMOBILE

OUTSIDE FRAME TRAILER

THE TRAILER COMPANY OF AMERICA, CINCINNATI, OHIO
Sales and Service Offices in Principal Marketing Centers

After cutting the glass to shape, the stripping material is measured out.

C. H. WALKER, president of The Everseal Products Company, Detroit, Mich., gives some timely advice on the correct procedure for installing automobile glass.

HOW *to* INSTALL GLASS

THE SETTING of automobile glass in doors and windows of cars, trucks and buses has for a long time been one of those "mysterious" jobs that many fleet operators have been afraid to tackle, principally because many of their fleet mechanics did not know exactly how to go about the job, resulting in the breaking of much new glass during installation, and eventually sending the job out to a glass specialist to be done properly.

Now along comes C. H. Walker, president of the Everseal Products Company, Detroit, Mich., with a new method that is said to be equally adaptable to glass installation both in the automobile factory as well as in the fleet garage, automotive service station, car dealer's establishment, etc. A specially prepared sealing material, available in rolls, as illustrated above, makes easy installation possible, it is claimed.

Actually, there are ten basic steps in setting a piece of glass, according to Mr. Walker. The tools are simple; the method easy, even for a novice. To illustrate the average successful glass-setting procedure, a typical job has been photographed, step-by-step, some of the photos accompanying this article.

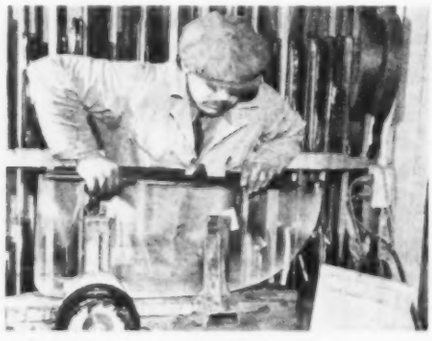
The first step is to cut the piece of new glass to size and shape, and install it in a glass-worker's vise of the type illustrated above. Step number two is to unroll a length of the glass-stripping or sealing material. The third step is to measure the stripping material to the length of the window-channel. Step number four is the cutting of the stripping material to the measured length. Very simple and elementary, thus far.

The fifth step is to apply ordinary lubricating oil to the side of the strip that is to fit into the metal channel, as shown in the left-hand small illustration at the bottom of this page. This is important, as the oil enables the stripping material to slide easily into the channel. After the glass is set, the oil softens this stripping material, causing it to swell and become even more sticky. Thus, a perfectly water-tight seal is formed between channel and glass, with high adhesion but without strain, according to Mr. Walker.

The sixth step consists of applying the metal channel to the prepared strip, lying on the edge of the glass, as shown in the middle photo on the bottom of the page. Note that only ordinary hand pressure (step number seven) is required to complete the setting. The eighth step is to get around the square corners, which is done with the aid of pliers, by pinching the stripping material on the folds. Step number

(*Please turn to page* 69)

Applying lubricating oil, before putting on the metal window channel.



Note that only a slight hand pressure is required to install metal channel.

Material is bent around round corners and glass is pushed into frame easily.

LEARN THE INSIDE FACTS BEFORE YOU BUY!

A Jack is no Better than its Power Plant

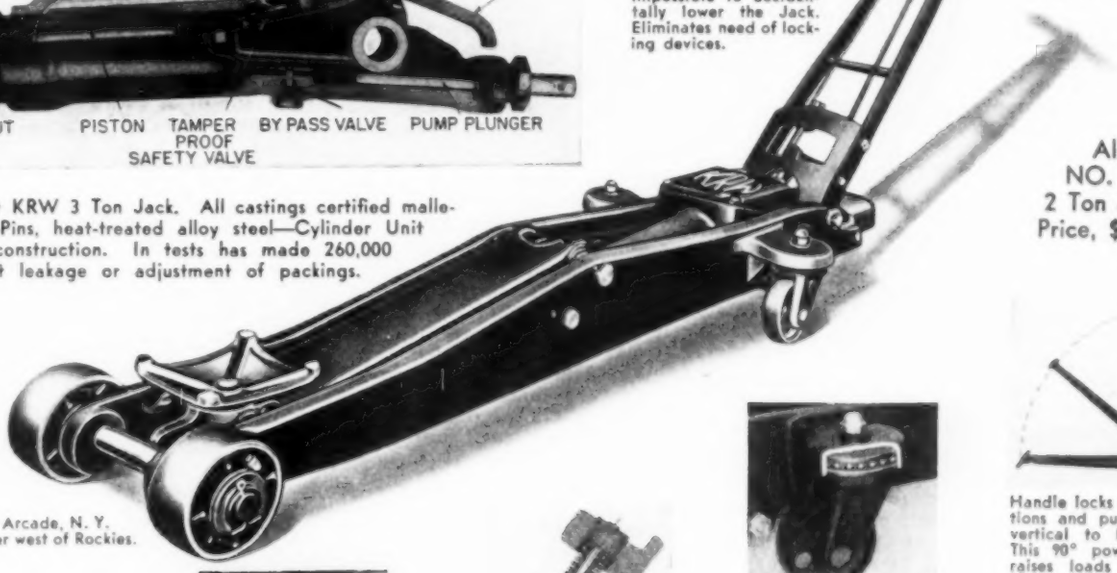
When you buy a Jack look deeper than price and color of paint. Don't be misled by appearance. Remember the *most important* part of any Jack is its *"Power Plant"*—the "down-inside" hydraulic mechanism that raises and lowers the load. The service you get depends on this important but so-little-talked-of mechanism. Only KRW Jacks advertise the "inside facts" showing the whole sturdy oversize mechanism with its many patented features so that you may see why men who really know Jacks inside and out specify KRW.

Location of "finger tip" release lever makes it impossible to accidentally lower the Jack. Eliminates need of locking devices.

NO. 472
3 Ton JACK
Price, $42.50*
(Illustrated)

Also
NO. 679
2 Ton JACK
Price, $30.50*

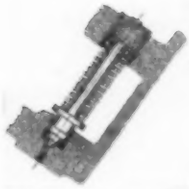
Power Plant KRW 3 Ton Jack. All castings certified malleable iron—Pins, heat-treated alloy steel—Cylinder Unit one-piece construction. In tests has made 260,000 lifts without leakage or adjustment of packings.



*Prices F.O.B. Arcade, N. Y. Slightly higher west of Rockies.

Handle locks in 3 positions and pumps from vertical to horizontal. This 90° power stroke raises loads quickly—Faster than so-called 2-speed models.

Rear Casters swivel on large ball bearings operating between hardened races.



Safety valve prevents overloading. Factory setting is tamper-proof. Remains a dependable safety feature throughout the life of the Jack.

Crowned front wheels carry load on roller bearings.

SINCE 1916 KRW A MARK OF DEPENDABILITY

MAIL COUPON FOR NEW JACK BULLETIN

HYDRAULIC JACKS

ENDORSED BY MORE THAN 11,000 SATISFIED USERS

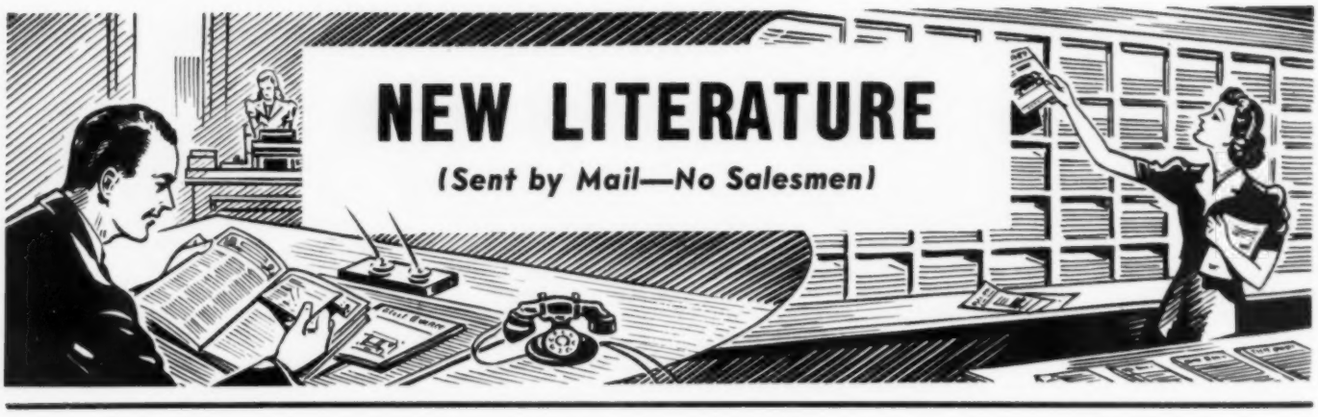
K. R. WILSON

MAIN OFFICE: LOCK STREET, BUFFALO, N. Y., U. S. A.
EXPORT OFFICE: 90 WEST STREET, NEW YORK, N. Y., U. S. A.
WEST COAST: 722 MATEO ST., LOS ANGELES, CAL., U. S. A.

MAIL THIS COUPON

K. R. WILSON, 40 Lock St., Buffalo, N. Y.
Please send Hydraulic Jack Bulletin No. 40.

Name .....
Address .....
City ..... State .....



NEW LITERATURE

(Sent by Mail—No Salesmen)

(Ten new Automotive Booklets, Selected on their Merits only)

71. SIZES AND WEIGHTS. . . . Many changes are now being made in the truck size and weight regulations in various states. Texas, for instance, has just increased the gross from 14,000 lb. to 38,000 pounds. A new pocket-sized manual, hot off the press, contains up-to-date data on all 48 states, and to make it *official*, each set of state regulations is *signed* by a motor vehicle officer of that state. . . . You don't need the services of a transportation expert when you want to run your vehicles into other states—not if you have a copy of this book, which is offered *free*, without obligation and containing no advertising. . . . We distributed thousands of free copies in past years, and are glad to continue the service. Mark No. 71 on our post-card if you want one.

•

72. PISTON RING MANUAL. . . . Here's a *real* shop book, acclaimed by service men as one of the most outstanding pieces of educational literature ever produced. . . . It treats with piston rings and all related subjects, including pistons, oil-pumping, piston-slap, re-ringing without reconditioning, valve work, pointers on connecting-rod and main bearing servicing, etc. In fact, 25 subjects are listed in the index alone. Over 120,000 copies of this 32-page book have been distributed. If you didn't get yours, just mark Number 72 on our post-card and we'll see that one is *mailed* to you without obligation.

•

73. CLEANING MANUAL. . . . The title of this new booklet is *"Bendix Cleaner"*. It illustrates and describes Bendix's brand-new method of cleaning automotive parts and tells, by means of up-to-the-minute illustrations, exactly how the new system works. . . . This cleaner is said to be *different* from anything else on the market, so don't hesitate to ask for the booklet, if you'd like to learn more about it. . . . Number 73 on our post-card brings a free copy, promptly and by mail.

•

74. GREASING EQUIPMENT. . . . New manuals are needed, once in a while, to keep you up-to-date on the many changes taking place in the development of shop equipment. Especially is this true of greasing guns and air compressors. . . . One booklet, entitled *"Greaservers"* illustrates and describes the latest in lubricating equipment, while another entitled *"Air Compressors"*, takes you through a complete line of compressors of all types—single and two-stage, vertical and horizontal, and large and small jobs. . . . Number 74 on our post-card indicates that you want copies of these books sent *by mail*, without obligation of any kind. We'll follow through.

•

75. EXPANDER RINGS. . . . And here is a little booklet issued by Ramsey's research staff, dealing with the features of expander-type piston rings. . . . It describes the advantages of such rings in high-performance engines, and presents data from dynamometer tests, as specific proof. . . . Designed as an *educational* piece of literature, rather than a selling instrument. . . . We'll get one for you, *free*, if you indicate your desire for one by placing Number 75 on our post-card.

•

76. CRANKSHAFT GRINDING. . . . In the old days you had to take the crankshaft out of the engine, and send it out to a shop equipped with a $5,000 machine for re-grinding crankshafts. . . . Today that operation has been reduced to the use of a simple, inexpensive machine that works even easier and quicker than a portable cylinder-boring outfit—and you know how easy *that* is. . . . A new 8-page bulletin gives complete information on equipment of this kind, shows how crankshafts can be trued right in the motor in only a few minutes' time for each journal; also how you can set the thing up in your lathe, if you prefer to do it that way. . . . Number 76 on our post-card and the free booklet is yours, via the mail-man.

•

77. VALVE SERVICING. . . . Valve-grinding, too, has changed since the "old days" when we used to use emery-paste and a screw-driver. . . . A 24-page booklet, recently issued, gives the latest low-down on how valves and valve-seats can be ground to factory standards of precision, with simple equipment at low cost. . . . This literature promises fast precision grinding with tappet adjusting eliminated, to get your vehicles back into service quickly. . . . Synchronizing of valve face with valve seat is the principle involved. . . . Number 77 and this free 24-page book is yours by mail. The post-card is for your convenience.

•

78. VOLTAGE REGULATION. . . . Always considered a "tricky" subject by fleet men, but now made as simple as "a-b-c" by Delco-Remy, who has issued a 24-page book. . . . By means of many pictures, in movie style, the book takes you right through the whole subject of heavy-duty voltage regulators, tells how they operate and how to adjust and maintain them. . . . While you are waiting for us to finish our series of articles on this subject, the book will come in handy for educational uses, testing and actual maintenance. . . . Number 78 on our post-card and we'll try to get a *free* copy of this valuable book for you.

•

79. COST-KEEPING FORMS. . . . Many inquiries come to us for standardized cost-keeping forms and invariably we refer the inquirer to his favorite truck manufacturer, as most of the leading ones have published systems of this kind, free for the asking. . . . This month Dodge calls their *"Operating Record for Trucks and Buses"* to our attention, which is a book containing ruled page forms for each month of the year, for each truck. Spaces are designated for entering mileage, daily expenditures, repairs, gasoline, oil, tires, etc., as well as number of trips and loads. . . . Thousands of free copies have been distributed. . . . If you'd like to see what this is like, place Number 79 on our post-card and we'll ask them to send you a sample.

•

80. SOLVES OIL PROBLEMS? . . . A 20-page booklet has just been issued, which correlates laboratory analyses of motor oil with actual service data, in order to assist the fleet operator in determining the next step to take in solving his motor oil problems—and don't tell us that you haven't any! . . . The booklet discusses the factors involved in determining the service life of motor oils, describes the company's method of determining the condition of used oils, explains the importance of samples of draining, and gives several *actual* case-histories from actual fleet men's engines. . . . Number 80 on our post-card and a copy will be mailed.

No. 118—SHOP EQUIPMENT (Confidential)

What percent of your fleet maintenance work is done in your own shop? .....%

How many mechanics do you have in your shop?..... Do they own their own hand-tools? ☐ Yes; ☐ No

What is the approximate value of each mechanic's own hand-tool set? $..... *(Rough figure will do)*

What items of shop equipment do you have in your shop? *(Please check all items you have, in list below)*

- ☐ Acetylene Welding
- ☐ Air Compressor
- ☐ Arbor Press
- ☐ Axle Gauge
- ☐ Axle Stand
- ☐ Battery Charger (Slow)
- ☐ Battery Charger (Fast)
- ☐ Battery Repair Equip.
- ☐ Battery Tester
- ☐ Bearing Boring Jig
- ☐ Bearing Packer (Grease)
- ☐ Bearing Puller
- ☐ Bearing Reamer Outfit
- ☐ Body Repair Equip.
- ☐ Bolt Cutters
- ☐ Brake Drum Lathe
- ☐ Brake Lining Grinder
- ☐ Brake Riveting Machine
- ☐ Brake Tester
- ☐ Bushing Puller
- ☐ Car Washing Machine
- ☐ Car Washing Gun
- ☐ Chain Hoist
- ☐ Cleaning Tank
- ☐ Clutch Re-Surfacer
- ☐ Clutch Pilot Tools
- ☐ Coil Tester
- ☐ Condenser Tester
- ☐ Compression Gauge
- ☐ Conn. Rod Aligner
- ☐ Crank Pin Truing Tool
- ☐ Creepers
- ☐ Cylinder Boring Bar
- ☐ Cylinder Hone
- ☐ Cylinder Gauge
- ☐ Cylinder Grinder (Large)
- ☐ Cylinder Ridge Reamer
- ☐ Decelerometer
- ☐ Drill Press
- ☐ Electric Drills
- ☐ Electric Drill Stand
- ☐ Electric Sander
- ☐ Electric Test Bench
- ☐ Electric Welder
- ☐ Engine Dynamometer
- ☐ Engine Repair Stand
- ☐ Engine Test Stand
- ☐ Exhaust Gas Analyzer
- ☐ Feeler Gauges
- ☐ Fender Repair Tools
- ☐ Fender Rollers
- ☐ Flexible Shaft Outfit
- ☐ Floor Jacks
- ☐ Floor Lamps
- ☐ Fountain Brush
- ☐ Frame Straightener
- ☐ Gas Tank & Pumps
- ☐ Gasoline Torches
- ☐ Gear Case Flusher
- ☐ Gear Puller
- ☐ Glass Machinery
- ☐ Greasing Equipment
- ☐ Grease Rack
- ☐ Grinding Wheel
- ☐ Headlight Tester
- ☐ Hoist (Overhead)
- ☐ Hoist (Portable)
- ☐ Horses (Adjustable)
- ☐ Hydraulic Jacks
- ☐ Hydraulic Power Kit
- ☐ Lathe
- ☐ Lift (for Vehicles)
- ☐ Mechanical Jacks
- ☐ Metal Spray Gun
- ☐ Micrometers
- ☐ Milling Machine
- ☐ Motor Analyzer
- ☐ Oil Reclaimer
- ☐ Oil Sprayer
- ☐ Oil Tanks & Pumps
- ☐ Painting Booth
- ☐ Paint Drying Lamps
- ☐ Paint Spray Guns
- ☐ Paint Striping Gun
- ☐ Pedal Depressor
- ☐ Piston Expanding Tool
- ☐ Piston Grinder
- ☐ Piston Pin Hone
- ☐ Pit (for Service)
- ☐ Pneumatic Hammer
- ☐ Pneumatic Sander
- ☐ Pneumatic Wrench
- ☐ Portable Crane
- ☐ Portable Lights
- ☐ Radiator Flusher
- ☐ Radiator Test Tank
- ☐ Reamer Set (Hand)
- ☐ Reamer Grinder
- ☐ Reamer Drive (Power)
- ☐ Rear Axle Stand
- ☐ Rebabbitting Outfit
- ☐ Rim Tools
- ☐ Ring Compressor
- ☐ Ring Groove Cleaner
- ☐ R.P.M. Indicator
- ☐ Sand Blast Outfit
- ☐ Shaper
- ☐ Soft-Face Hammer
- ☐ Soldering Iron
- ☐ Spark Plug Cleaner
- ☐ Steam Cleaning Equip.
- ☐ Surfacing Machine
- ☐ Tap & Die Set
- ☐ Timing Light
- ☐ Tire Brander
- ☐ Tire Chain Rep'r. Kit
- ☐ Tire Gauges
- ☐ Tire Inflator
- ☐ Tire Regroover
- ☐ Tire Retreader
- ☐ Tire Spreader
- ☐ Tire Vulcanizer
- ☐ Torque-Ind. Wrench
- ☐ Tow-Truck (Wrecker)
- ☐ Transmission Hoist
- ☐ Transmission Stand
- ☐ Tube Vulcanizer
- ☐ Valve Grinder
- ☐ Valve Lifters
- ☐ Valve Refacer
- ☐ Valve-Seat Cutter
- ☐ Valve-Seat Grinder
- ☐ Valve-Seat Inserter
- ☐ Vises
- ☐ Wheel Aligning Equip.
- ☐ Wheel Balancer
- ☐ Wheel Dolly
- ☐ Wheel Pullers
- ☐ Woodworking Mach'y.
- ☐ Work Benches

How many vehicles in your fleet? *(Please indicate below)*

Trucks..... Tractors..... Trailers..... Pass. Cars..... Buses..... Miscellaneous.....

HOW much equipment is necessary for a fleet of a given size? . . . Your help in answering this questionnaire will enable us to give you the right answer. . . . Just make checks against the items you have. . . . That's all.—Editor.

Name of Firm.....

Address .....

City and State.....

Your Name ..... *Position*.....

(Please send all replies to The Editor, Fleet Owner, 90 West St., New York, N. Y.)

FORD

PUTS TRUCKS THROUGH "PACES" ON NEW TEST TRACK

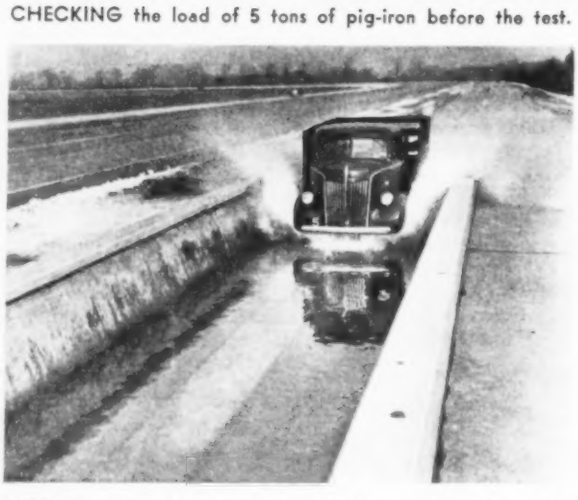
TODAY'S motor trucks are the toughest and most rugged ever built—but how do they get that way?

For the answer, you'll have to go farther than the steel mill, the foundry and the assembly line. Present-day truck manufacturers are pounding stamina and service into their product on their own test tracks and proving grounds.

Trucks sold to customers seldom are called upon to withstand the degree of punishment that similar models get on the track and proving ground. Day and night, for hundreds of consecutive 24-hour stretches, trucks are kept on the "go". They are subjected to every conceivable kind of rough usage and they must stand up under it consistently.

To illustrate the brands of mechanical torture dished out on these tracks to improve truck performance, let's take a look behind the scenes at the Ford Motor Company test track. From the hundreds of trucks coming off the assembly line of the company's Rouge plant at Dearborn, Michigan, the engineers take one at random. The truck begins a run of from 15,000 to 70,000 miles.

CHECKING the load of 5 tons of pig-iron before the test.



HITTING 6 in. of water in the 300-ft. trough at 40 m.p.h.

•

By Marvin Arrowsmith

Test procedure varies with the model and with the type of work the truck was designed to do. But let's pick a Ford V-8 Cab-over-Engine Stake Truck, 134" wheelbase.

The truck is loaded first with five tons of pig-iron. Driven onto the track, it makes two 2¾-mile laps at 50 mph. In getting underway the driver is instructed to accelerate in first gear to 10 mph, hold it there for 10 seconds, then accelerate in second gear to 20 mph and hold for 10 seconds before shifting to third. After each shift the accelerator goes to the floor, a procedure exceedingly hard on the motor.

The third lap is punctuated by two brake stops and the acceleration procedure described above follows both. The fourth lap is the "torture trip". It begins at 40 mph over brick pavement. The pace slows to 30 mph over the rougher Belgian block, then drops to 10 mph for a quarter mile of punishing cobblestone. The same speed is maintained over staggered humps of the "body twist" section. Then back to 50 mph over a black top stretch.

(*Please turn to page* 83)

THERE'S A BETTER YARDSTICK FOR MEASURING TRANSPORTATION COSTS

SINCE fuel is the largest single item of expense in operating any fleet, price per gallon is an important factor in measuring transportation costs. But there's an even better yardstick — and that's the net cost of the *work* accomplished by each gallon of fuel on a ton-mile or passenger-mile basis.

The amount of power available in any gallon of gasoline depends upon its octane number (anti-knock value). Oil refiners already have made possible important gains in power by substantially increasing the octane number of regular gasoline during the past five years (see chart at right), and there is no doubt that this trend will continue.

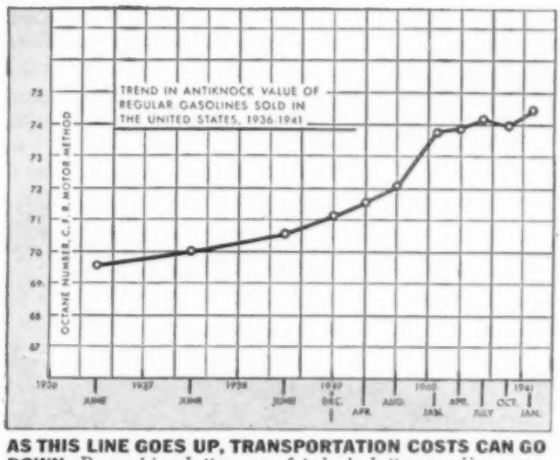
Here are the ways in which you can convert the extra anti-knock quality of modern gasolines into larger payloads, better mileage and more uniform schedules:

In older vehicles by installing high compression pistons or cylinder heads (as supplied by the manufacturer) when engines are overhauled or rebuilt.

In present vehicles which have high compression engines, by advancing the spark as far toward maximum efficiency as the improved gasolines will permit.

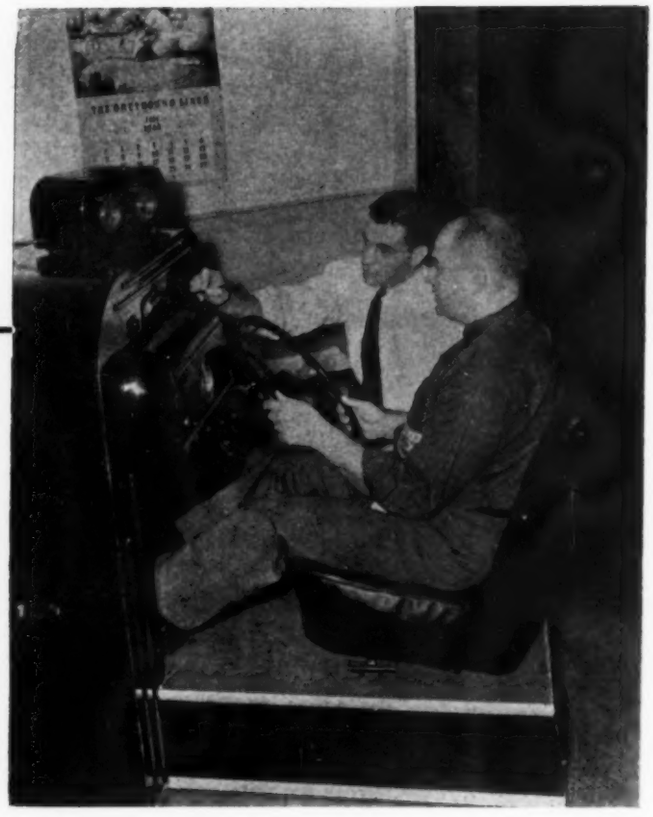
In purchasing new equipment by investigating the compression ratios available and specifying a ratio high enough to take full advantage of modern gasoline.

Ethyl engineers will be glad to be of service to commercial operators who are interested in better operation. Fleet Division, Ethyl Gasoline Corporation, Chrysler Building, New York City.



AS THIS LINE GOES UP, TRANSPORTATION COSTS CAN GO DOWN. *By making better use of today's better gasoline, commercial operators are reducing operating costs.*

MAKE BETTER USE OF TODAY'S BETTER GASOLINES



DRIVER TEST: John C. Pedulla, safety examiner of the Pennsylvania Motor Police, supervises a test in the driving clinic which helped the Supplee-Wills-Jones Milk Company, Philadelphia, Pa., cut accidents 24.3%. . . . Taking the test here is William Moore, one of 808 Supplee-Wills-Jones drivers who were honored recently, for compiling 30,734,500 miles of safe driving, in door-to-door work, in the last 9 years.

A "SAFETY PLAN" THAT WORKED!

•

By R. W. Morton

PROOF that accident-prevention campaigns are effective can be obtained from any company which has sincerely tried them. Once started, a safety campaign is seldom discarded. The Supplee-Wills-Jones Milk Company of Philadelphia, Pennsylvania, provides a recent example of what can be done. During the past twelve months truck drivers of this company have reduced their motor vehicle accidents by 24.3 per cent.

These figures were revealed recently when Robert I. Gayley, safety director of the company, announced that 808 truck and wagon drivers (out of 950) had qualified for safe-driving awards. Most of the others had not been employed long enough to qualify. The award winners have driven a total distance of 30,734,500 miles in New Jersey and Pennsylvania, without a chargeable accident since the awards were started nine years ago. This distance is equal to nearly 1,200 trips around the world.

"We have been intensifying our accident-prevention campaign every year," Mr. Gayley said. "During the past twelve months alone we have reduced our motor vehicle accidents 24.3 per cent. In great part this was due to the training our truck drivers have received in a driving clinic conducted by the Pennsylvania Motor Police. We originated this system of cooperation with the Motor Police. Since then other business concerns in this locality have followed suit.

"This clinic tests drivers on such subjects as ability to judge the distance and speed of moving vehicles, vigilance, coordination, reaction to the glare of headlights, and complete knowledge of motor laws. When the clinic uncovers a driving fault in one of our men, the latter's superior is notified and the man is not allowed to take out a truck alone, until he corrects the fault. Physical defects must also be corrected.

"We now refuse to hire a new driver unless he can pass the driving clinic plus a thorough physical examination. If one of our men has an accident, we discuss the reasons for it in one of our weekly safety meetings. At those meetings we also question men on the state motor code."

(*Please turn to page* 91)

MAJOR E. J. HENRY, commander of the 4th Squadron, Pennsylvania Motor Police, awards a 9-year safe-driving button to William Moore, truck driver for Supplee-Wills-Jones Milk Company, while Robert I. Gayley, company safety director, looks on. . . . The Motor Police Driving Clinic helped this fleet cut accidents 24.3%.

De Luxe Coupe Express—illustrated, $689, delivered at factory, South Bend, Indiana. Bumper guards and white sidewall tires extra

Priced right down among America's lowest!

STUDEBAKER COUPE EXPRESS

YOU'LL haul your half-ton loads for less money in this low-priced two-purpose Studebaker Coupe Express. First of all, you'll have only a small amount of money invested in this Coupe Express. And when you figure actual operating costs you'll save money on gasoline, oil and tires, in a steady stream, nickel by nickel, mile by mile!

Modern, full-pressure lubrication, positive sludge-protection and generous cooling assure long engine life. Widest commercial car seating, bigger Vee windshield, bigger doors with angle-set all weather ventilators to provide real coupe comfort. Live rubber spring shackles, finest hydraulic shock absorbers and shock-insulated, multi-ratio cross steering.

Larger Studebakers are low priced too—Standard and Heavy Duty Series—each in 3 different wheelbases. See your Studebaker dealer. The Studebaker Corporation, South Bend, Ind. *Export dealers address: The Studebaker Export Corp. Cables: "Studebaker" South Bend, Indiana.*

New Studebaker Standard Truck Series for economical transport of medium loads. Available in 3 wheelbases.

New Studebaker Heavy Duty Truck Series makes every load a pay load. Available in 3 wheelbases.

COUPE EXPRESS STANDARD MODEL $664

COUPE EXPRESS CHASSIS PRICES BEGIN AT . . . $516

STANDARD TRUCK CHASSIS PRICES BEGIN AT . . . $626

HEAVY DUTY CHASSIS PRICES BEGIN AT . . . $703

Prices delivered at factory. South Bend, Ind., as of April 20, 1941—subject to change without notice—Federal tax included.

DOMESTIC RUBBER

● *To the Editor:* What is the most important product to the automotive industry produced outside of the United States? It's rubber, isn't it?

It seems to us that automotive publications such as FLEET OWNER are missing the boat if they don't wake up their industry to the fact that rubber is being produced in small quantities right here in the United States, and that it could be produced in *large* quantities if somebody would start something.—*G. A. McAdams, Pres., Salinas Chamber of Commerce, Salinas, Calif.*

●

SPEEDOMETER LOCKS

● *To the Editor:* You had an inquiry in a recent issue from a fleet man who is seeking speedometer locks. I suggest that he write to The U-Drive Company, Wayne, N. Y., as I think they can supply them.

We have been using such locks for the past eight years and they have been just what we needed.—*C. J. Wilson, U-Drive-It Company, Scranton, Pa.*

●

COMMENTS ON COST ARTICLE

● *To the Editor:* The February issue of FLEET OWNER magazine carried an article by A. E. Friedgen, Transportation Consulting Engineer, on the subject of Motor Truck Cost Analysis.

Such articles as these in magazines like yours are a very fine contribution to the truck industry. There are too few operators who realize the importance of proper cost and experience control over their fleet operations. We do see, however, since the first of this year, a decided change taking place in the industry among parts houses, motor rebuilders and equipment manufacturers.

It is being realized amongst these individuals that the operation of a fleet of motor vehicles must be handled in a businesslike manner. Organization and personnel must be developed and trained, as is done in any big business.

With high taxes, tariff control, etc., the days of tremendous profits, without knowing anything about the business, are about over.

Getting back to Mr. Friedgen's article, we'd like to take issue with the cost figures in the fifth paragraph, relative to the 2½-ton unit. Our opinion is that the maintenance cost figure is rather high. Possibly, additional data should have been included in the article to support such a figure, as in order to promote intelligent discussion, it is essential to have *all* the facts and figures before you.

However, in the main, we sincerely believe that there were some very fine points brought out to advantage in this article. We hope that some day all fleet operators will look upon the services of the transportation engineer, as most business men today evaluate the services of a public accountant.—*Charles C. Reum, Director, Motor Cost Analyzation Service Co., St. Louis, Mo.*

●

"OH BOY!" SAYS HE

● *To the Editor:* Oh Boy! Are those Question-of-the-Month reports something! I can just picture many fleet supers who have read the answers in the tabulated summaries, changing their oil, spark plugs, greasing, etc., just at the right time, and in accordance with general practice as revealed by these surveys.

I get a great deal of pleasure out of reading your magazine, FLEET OWNER, and also the Question-of-the-Month tabulations. May I thank you for past courtesies and remain a regular reader.—*Paul Hampp, Service Mgr., Walton Baking Company, Toledo, Ohio.*

●

WE "GET AROUND"

● *To the Editor:* We like to participate in your Question-of-the-Month department, but suggest that you try to keep the question blank on the back of a page that does not contain some good material.

You'd be surprised how your magazine, FLEET OWNER, gets around, and how the boys in the shop will squawk when some good material is missing. —*John E. Vallerie, Vallerie's Transportation Service, Norwalk, Conn.*

ANNUAL NOTE OF THANKS

● *To the Editor:* In winding up another busy year, we wish to express our appreciation for your valuable publication, FLEET OWNER, which has been received throughout the year.

Regularly, you have supplied news, information and fun, directly related to our daily work.

So, quite naturally, we sincerely appreciate what you have brought us during the past year, and look forward to what FLEET OWNER may provide during the coming year.—*Clarence J. Martin, Supt., Phillips Petroleum Company, Bartlesville, Okla.*

●

LIKED OIL-FILTER ARTICLE

● *To the Editor:* The splendid article, *"More About Oil Filters,"* by Hoy Stevens, which appeared in a recent issue of FLEET OWNER magazine, was of considerable interest to us, from the standpoint of its informative value to fleet operators.—*C. E. Johnson, Transportation Supt., Pacific Coast Aggregates, Inc., Oakland, Calif.*

●

JUST BOUQUETS

● Editor Fischer notes with interest and appreciation the following brief remarks, penned-in on various correspondence coming into his office. This means is taken of acknowledging same:

● "I enjoy your magazine, FLEET OWNER, very much, and appreciate your keeping my name on your mailing list."—*W. H. Haley, The Texas Company, Jacksonville, Fla.*

● "I would like to take this opportunity to thank you for FLEET OWNER. I find lots of good and valuable information in it, that really is helpful in my work."—*R. C. Kaster, Shop Foreman, Johnson County Garage, Olathe, Kans.*

● "We are pleased to be of service to FLEET OWNER at any time, as we all get a great deal of value and enjoyment from reading this magazine."—*L. L. Marsh, Maintenance Engineer, Kansas State Highway Department, Topeka, Kans.*

PIERCE GOVERNORS ARE *Guaranteed for One Year*

YOU WANT A GOVERNOR that really stands up in regular truck service — defying dust, sludge, gum, heat, wear, cheating and tampering.

Pierce Governors are *guaranteed for a full year*—even in the most severe service! Such a guarantee can be given only because Pierce Flyball and Pierce Seal-Aire Governors embody new features of governor design and construction that assure far longer life.

The Pierce Seal-Aire Governor has *inside vents* . . . only the *cleaned* air from the engine air-filter can get into the rigid cast-iron governor body. No dust can enter, or sludge form to cause gumming, sticking, and excessive wear. Many times longer life is assured and there's no chance for tampering. That's why Pierce can *guarantee this governor for one full year*. Use it where *engine-speed control* is satisfactory, such as cab and delivery fleet operation in cities.

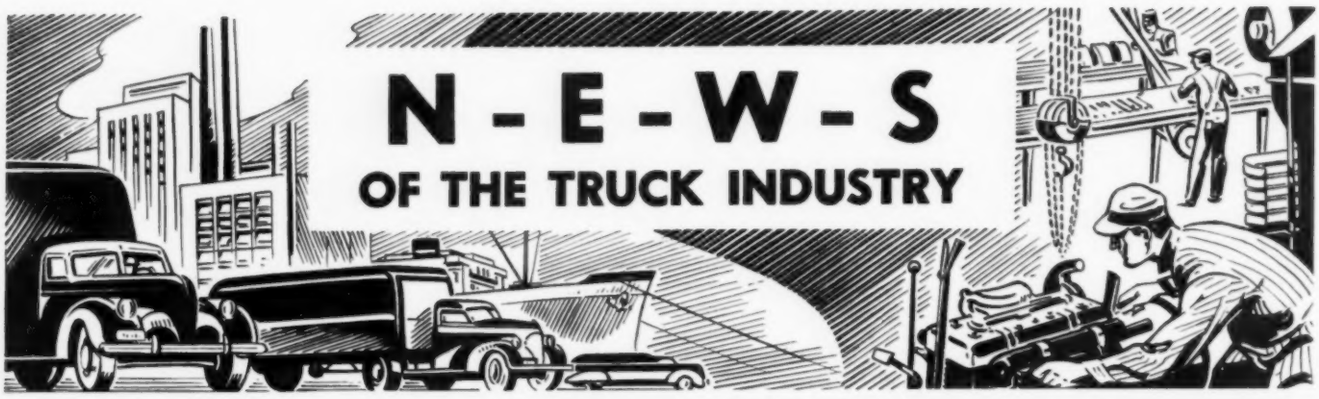
For road speed control — without limiting engine power — use the Pierce Flyball Transmission-Drive Governor, readily installed with flexible shaft to a dual-drive at the speedometer take-off. It can be set for *any* desired speed limit on the open road without cutting the full engine power needed on hills, in traffic "spots" or heavy going in inter-city and heavy-duty hauling. It makes possible better control in traffic, saves time and engine wear, and makes for greater safety. It will outlast any other governor, and is *fully guaranteed for one year.*

Select the installation that meets your type of fleet service, or write us for information on application to your fleet equipment.

THE PIERCE GOVERNOR CO. • ANDERSON, INDIANA
1613 OHIO AVENUE
Industrial and Automotive Engine Governors
Manufacturers of the Sisson Automatic Choke

● *Pierce Governors are standard equipment on Mack Trucks, Buda, Hercules, and other well-known engines; on the majority of diesel engines for industrial, marine and automotive service; and are available for all automotive equipment.*

GUARANTEED
Pierce Governors



N-E-W-S
OF THE TRUCK INDUSTRY

Factory Sales Increase in 1st Quarter

FACTORY sales of cars and trucks in the United States in March totaled 512,150 units, according to estimates by the Automobile Manufacturers Association. This compares with a showing of 423,620 cars and trucks in March of last year. . . . For the first three months of 1941, sales of cars and trucks totaled 1,498,604 units compared with 1,259,931 in the corresponding period of 1940.

●

Kroblen Now Reo General Sales Mgr.

APPOINTMENT of E. R. Kroblen as general sales manager of Reo Motors, Inc., was announced last month by Henry E. Hund, president of the company. . . . Mr. Kroblen is a veteran of the Reo organization. Twenty-five years ago he started with the Omaha branch and subsequently served in various sales capacities, both wholesale and retail. For the past three years he has been manager of the Chicago Reo branch. . . . Our best to you, Mr. Kroblen!

●

Studebaker Has "Largest March"

RETAIL sales of Studebaker passenger-cars and trucks in the U. S. during March were the largest for that month in the history of the company, also the best for any single month since May, 1928. . . . Domestic deliveries in that month amounted to 13,636 cars and trucks—a gain of 54 percent over the 8,829 units sold in March 1940. . . . For the first quarter of 1941 retail deliveries amounted to 30,298 units—a record for the period. This compares with 22,389 units sold in the first quarter of 1940.

●

Nash Sales Make All-Time Record

THE NEW car with which Nash Motors entered the low-priced automobile field a few months ago has brought the company the biggest sales in its 25-year history and established a new all-time first-quarter sales record, according to W. A. Blees, general sales manager. . . . During the first quarter Nash dealers delivered 26,193 new cars to customers, as compared with 13,070 in the first three months of 1940. . . . This figure even exceeds the best previous record of Nash—23,699 units, set in the first quarter of 1929. . . . To the new low-priced Nash Ambassador '600' goes principal credit for the new record, Mr. Blees declared.

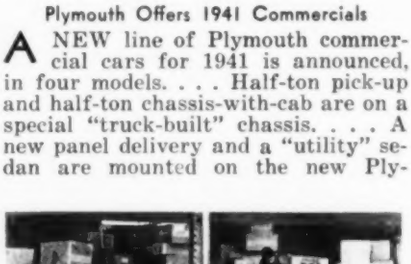
Furlong New Dodge Regional Truck Mgr.

APPOINTMENT of Don G. Furlong as regional truck manager of the Detroit region, which includes Michigan, northern Ohio and Indiana, is announced by Dodge Brothers Corporation at Detroit. . . . For five years previous to his present appointment, Mr. Furlong has been truck manager for Dodge in the Detroit city area. . . . Since 1921 he has been engaged exclusively in truck sales work, mostly in the Detroit area, for leading manufacturers of trucks and truck equipment.

●

Plymouth Offers 1941 Commercials

A NEW line of Plymouth commercial cars for 1941 is announced, in four models. . . . Half-ton pick-up and half-ton chassis-with-cab are on a special "truck-built" chassis. . . . A new panel delivery and a "utility" sedan are mounted on the new Plymouth passenger-car chassis. . . . Cabs are of the 3-man type. The pick-up gives more than 6½ feet of payload space with tail-gate closed. The chassis-and-cab consists of the chassis, fenders, running-boards, hood and built-in cab, ready for mounting any type of body. . . . Engine improvements give additional power over last year. A 10-inch clutch is used.



●

FWD Loses Two Executives

FOUR-Wheel-Drive Auto Company, Clintonville, Wis., announces with deep regret the death of two members of its executive personnel. . . . Frank Gause, secretary of FWD since the forming of the corporation in 1910, died on April 2nd of a cerebral hemorrhage. . . . Charles S. Thompson, export manager of FWD for the past twenty-three years, died on April 5th in Rio De Janeiro, Brazil. . . . The loss of both of these gentlemen will be deeply felt at Clintonville.

Baster Named White Vice-President

WHITE Motor Company announces the election of Forest S. Baster as vice-president in charge of engineering. . . . Mr. Baster, who came with White in 1936, was made chief engineer in 1937, in recognition of his work in designing White Super Power trucks. . . . He has been in the automotive field since 1919, starting with Packard and later having been with Lycoming, where he was chief engineer.

●

Richards New Studebaker Executive

E. E. RICHARDS has joined The Studebaker Corporation as assistant to the president. . . . Mr. Richards, who is 36, is a graduate of Dartmouth College and the Harvard Graduate School of Business Administration. He became a member of the industrial department of Lehman Brothers, investment banking firm, after leaving Harvard. . . . In that capacity for the past thirteen years, he has been in continuous association with a wide variety of industrial organizations. . . . He is a director of several corporations, among them Jewel Tea Company.

●

Watson Heads Studebaker Truck Sales

STUDEBAKER announces the appointment of C. F. Watson as sales manager of the Truck Division. . . . Mr. Watson's well-rounded experience particularly fits him to direct Studebaker's expanded commercial car and truck program. . . . Previous to his new assignment Mr. Watson was regional manager of Studebaker's Cleveland branch. . . . He has been active in this industry for 24 years, having been connected with Reo, Dodge and Continental Motors before joining Studebaker in 1936. . . . Our best to you, Mr. Watson!

●

"What You Don't Know CAN Hurt"

THE ABOVE is the title of a new 20-page booklet recently issued by the National Council of Private Motor Truck Owners, Washington, D. C. . . . This brochure tells the need for an organization of this kind, the objectives, and its accomplishments to-date. . . . Reading time is given as but 9 minutes and it is well illustrated with charts, graphs and simple analogies. . . . Every private fleet operator should see a copy of this publication, which will be sent free on request.

New FACTORY CONTROL *method of* TIRE RENEWING

ADDS THOUSANDS OF EXTRA MILES

TO TRUCK TIRES

Now—no matter what make of tires you use—The Kraft System permits you to have them renewed locally by the same uniform, scientific methods used by tire *factories*—under rigid controls—with *assured* results.

Factory approved equipment; factory specified methods; factory trained men; factory laboratory control—these combine to give you your first positive assurance of *dependable* extra mileage. They are the reasons why The Kraft System is reducing tire costs for thousands of truck operators.

There is nothing else like it—and only your Distributor for The General Tire has it. Visit or call him today. Get *all the facts* on this amazing new nation-wide money-saving method.

THE GENERAL TIRE & RUBBER CO. • Akron, Ohio
In Canada: The General Tire & Rubber, Ltd., Toronto

Balanced like a new tire! 15% to 20% more mileage

One of the 10 rigid, Kraft factory-controls is the use of the exclusive Kraft Balancer—an important step in careful factory production which the Kraft System brings to tire renewing for the first time. Unbalanced tires wear 15% to 20% faster than properly balanced tires—cause shimmy. This precision instrument balances the body of the tire and new tread, before curing, and insures *perfect balance* of the finished tire.

YOUR FIRST GUARANTEE OF UNIFORM *Quality*

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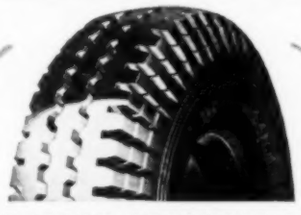


••FOR MORE *ORIGINAL* MILES
••FOR MORE *RECAP* MILES

The **GENERAL C·D**

Dean of all Truck Tires

THE KRAFT SYSTEM IS AVAILABLE ONLY AT DISTRIBUTORS FOR

The **GENERAL TIRE**

—goes a long way to make friends

Good Lubrication Cuts Costs, Records Show

BY PAYING close attention to lubrication details, Calhoun Brothers, operating a fleet of thirty-six Chevrolet trucks over the mountainous and desert region between Phoenix, Arizona and El Paso, Texas,

have been able to reduce their operating costs twenty per cent, records of the trucking company show.

The variable weather conditions under which this firm operates include winter temperatures below freezing, and summer heat of more than 120 degrees. In the summer months severe sand and dust storms through Arizona, New Mexico and Texas add to the hazards this firm must overcome in making its business a success.

Despite adverse weather conditions and the stiff mountain climb, the Calhoun Brothers' schedule calls for only fourteen hours, with a maximum load, to negotiate the 427 miles between Phoenix and El Paso and twelve hours when less than capacity loads are carried.

From Phoenix to Flagstaff, the fleet, each truck carrying a load of thirty-five thousand pounds, travels from an elevation of 1,200 feet to 7,000 feet. Equipped with twenty-four speeds forward, it requires "double under low", or last gear, to successfully negotiate many of the grades.

"By paying careful attention to our lubrication, the mileage between overhauls has been greatly increased," J. W. Calhoun, executive of the firm, recently declared. "In addition, by practically eliminating costly road failures our total operating cost savings amounts to twenty per cent," he concluded.

●

Truck Drivers' "Safety Club" Organized

TO PROMOTE safety on the highways of America through more careful truck driving, a new national organization is announced, to be known as the "Star Drivers' Club". Plans for the awarding of special recognition to truck drivers who pile up unusually good safety records were released by the sponsor of the Club, the U. S. Rubber Company.

Carrying the approval of Harold J. Jones, chairman of the safety committee of American Trucking Associations, the Club will give insignia ranging up to a diamond pin to safe drivers, in addition to safety award certificates and membership cards.

The certificate will carry the signature of F. B. Davis, Jr., president of the United States Rubber Company, and of Mr. Jones. It will state the award is made to the driver "in recognition of his long-established competency, driving ability and adherence to all principles of safe driving, with relation to his employer and the public."

Minimum requirements for membership in the Club will be a 300,000-mile record of operation without accidents for inter-city drivers, or 100,000 miles within the city or suburbs. An accident is defined as a mishap in which death, personal injury, or property damage occurs.

The name "Star Drivers Club" is described as having a two-fold significance. First, membership will be granted to those exceptional drivers who are as big "stars" in their line as the .300 hitters of baseball are in theirs. Second, for each additional 100,000 miles without an accident another star will be added to the Safe Drivers Club pin.

The highest award will be a diamond pin given for 600,000 non-accident miles in inter-city driving and 250,000 miles in city travel.

"Fleets that already have a safety program in effect will find the Club a splendid supplement to their safety activities. Fleets that have no safety program will find the Club a valuable step down the road to promotion of safety among their drivers," Mr. Jones declared.

●

Packard Develops New Taxicab Line

PACKARD Motor Car Company announces the addition of a line of modern taxicabs for national distribution and sale by Packard Federal Corporation of New York.

In addition to the New York type cab, already in operation, Packard is building a standard type taxi

with offset partition seat facing to the rear. Both types of cabs will be sold nationally through Packard Federal.

Packard's new New York type taxi incorporates many modern improvements, including larger brakes, a generator of greater capacity, heavy-duty axle, special heavy frame, stronger bumpers and re-enforced bumper-guards.

The five-passenger compartment is upholstered in leather with bright, easily-cleaned, plastic trim. Clean streamlines, a sky-lighted sliding top and ample legroom in the passenger compartment are features. The new cabs are completely insulated in preparation for the installation of Packard's air-conditioning system.

A department, devoted to correspondence from readers of FLEET OWNER. Any questions having to do with automotive service will be answered in this department. All properly signed inquiries will be replied to by mail and such of them as are believed to be of possible interest to other readers will be published in these columns.

OIL INFLUENCES "PING"

● *Question: Is motor "ping" (or so-called carbon-knock, spark-knock, detonation, etc.) influenced by the quality of the motor oil used?*

Answer: The foregoing question was submitted at a recent service manager's meeting held in New York City. A representative of an oil refiner volunteered the answer, which we reproduce here for whatever it may be worth to you:

"The formation of different types of carbon automatically classifies oils from an anti-knock standpoint. It is common knowledge that motor oils can and do act to increase or decrease the 'ping' or carbon knock caused by the presence of cake-like carbon deposits in the combustion chamber.

"This 'ping' is actually detonation, resulting from two causes: First, the cake-like deposit in the combustion chamber becomes extremely hot, causing pre-ignition. And second, it acts to further increase the compression ratio.

"In modern high-compression motors such a knock or 'ping' often develops at about 3,000 to 5,000 miles of regular service."

●

SEEKS TIRE-WEAR STANDARDS

● *To the Editor: We should like to have any information you can give us in regard to establishing a standard concerning the safety, or lack of safety, due to bald or smooth tires, and what disposition should be made of them, if not replaced with new tires.*

At present we prohibit the regrooving and retreading of any tires, but are seeking further data on which to base future decisions.—S.M.L., Washington, D. C.

Answer: Many tests have been made to prove that bald tires do not give the traction or skid-resistance that is obtainable with tires having a well-defined tread. We believe that any of the rubber companies, or the Rubber Manufacturers Association, New York, N. Y., can provide such test data.

With reference to establishing a standard, this should be easy, because visual examination of each tire will show up a bald-head—just as easy as you can tell white from black.

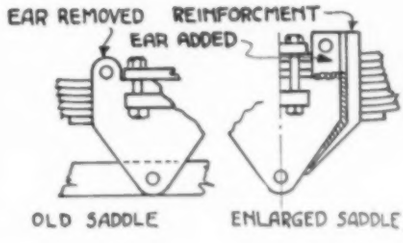
So far as the *safety* of bald-head tires is concerned, there is no question but that when a tire has worn down to that point, a great deal of the life built into it at the factory has been used up. Thin treads (in addition to lack of traction) provide greater hazard to road blow-outs, especially when encountering sharp objects, stones, etc. Besides, a thin tread will prove a great source of annoyance, as every little nail or tack that the tire might pick up has a better chance of puncturing the tube, causing a flat, loss of time, expense and plenty of profanity.

Since you arbitrarily prohibit the regrooving or retreading of any tires, there is little choice left as to what to do with your used tires. Trade them in for new ones, use them to play "quoits", or bring 'em home for the kids to play with.

●

SPRING BUILD-UP

● The accompanying sketch shows a job recently done on two tandem-axle, 7-ton trucks, in which it was necessary to add three leaves to the springs. Because of the design of the spring saddles, this was impossible, without building them up, as the saddle had to be 1½" higher, because the leaves were ½" thick.



Pieces of 1½" x 1½" mild steel were cut and shaped to the saddle and arc-welded to it. The saddle is cast steel. The ends of the saddle were cut off below the holes for the cross-bolts, and a longer piece was put in.

The sketch shows the parts separated from the casting. It took one day for each saddle, but it was the only way the job could be done, as larger saddles were not available.—*Claude L. Ames in "The Stabilizer".*

●

You May Not Believe It!

(But It's True)

THE FACT:

IT is just as easy to pass a big tractor-trailer unit on the highway (going in the same direction) as it is to pass a passenger-car.

THE PROOF:

DON'T be fooled by size or appearances. . . . The tractor-trailer unit will usually be traveling about 10 m.p.h. slower than the average passenger-car you might try to pass, and therefore it takes practically as many seconds to pass the faster-moving passenger-car as it does to pass the slower-moving (larger) truck. . . . Do you get it?

CURE STICKY VALVES?

● Instances have occurred where reports of engines missing, at first attributed to the ignition system, have been finally traced to sticking valves. A further investigation disclosed that gum which forms in the oil (in some engines more than others) had concentrated around the valve stems and interfered with their free motion.

An oil filter was installed to see if this would not help the condition. It not only removed the sticking valve condition, according to engineers of AC Spark Plug Company, but cleaned up the engine oil and improved the lubrication, oil consumption, and general performance of the engine.

This experience shows the extra value of installing oil filters, and enables the fleet mechanic, when he has an ignition complaint, to not only check the spark plugs and the ignition, but to check the oil filters, as well.

Prevents Battery Corrosion

PEP Manufacturing Company, New York, N. Y., announces "Korode-Kure"—a product that will remove all corrosion from battery terminals and prevent its formation. This ma-

terial is not new, having been marketed successfully in a limited territory by its former maker for over three years.

One application to the battery terminals is guaranteed by the maker to remove any corrosion present and prevent the formation of further corrosion for as long as the battery remains in the vehicle. It is used also to prevent corrosion of battery cables, and, applied as a paint, will protect handles, trays, hold-downs and other metal work near the battery.

Korode-Kure is packaged in 5-oz. cans with brush attached to the lid, as well as in pints and quarts. . . . For more details, prices, etc., address Pep Manufacturing Co., 33 W. 42nd St., New York, N. Y., mentioning FLEET OWNER, please.

•

Clutch Manual is Free

THE title of the latest in clutch service manuals is a 42-page book entitled *"How to Service Automotive Clutches"*, an offering of Borg-Warner Service Parts Company, Chicago, Ill.

This book is one of the *best* we have seen on clutch service in a long time, and covers complete, step-by-step service operations on all Borg & Beck, Long and Rockford clutches, which are original-equipment on many makes of cars, trucks and buses.

Attractively done in popular "movie" style, the manual contains data on adjustment, servicing and replacement of the various clutch types and the information in it can be quickly found, and easily absorbed through the use of the many illustrations, drawings, diagrams, etc.

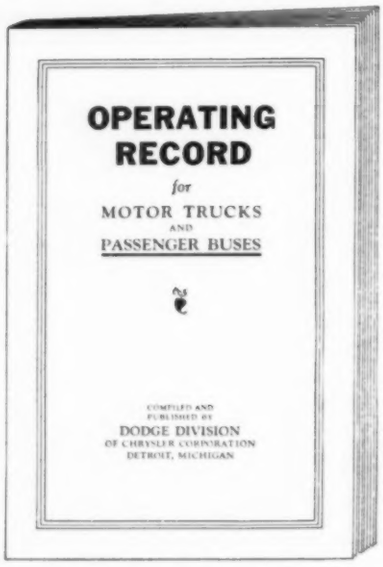
For your free copy write to Borg-Warner Service Parts Company, 310 S. Michigan Ave., Chicago, Ill., mentioning FLEET OWNER and asking for a free copy of the new *"Clutch Service Manual"*. There's no obligation, of course.

•

Free Truck-Cost Book

THE increasing tendency of more and more truck operators to keep complete and accurate records of the cost of operating their vehicles is reflected in the demand for a book called "Operating Record for Motor Trucks and Passenger Buses", published by the Dodge Division, Chrysler Corporation, Detroit, Mich.

The book contains ruled page forms for each month of the year. On these



pages the truck operator can set down daily expenditures for gasoline, oil, repair and maintenance items, drivers' and helpers' wages, speedometer readings, daily mileage, hours of operation, number of stops, number of trips, and the average load. At the end of the month the operator has a concise and easily analyzed record of his truck operating costs.

Pages for indirect costs make it easier for the average truck owner to compute the cost of taxes, license, garage, administrative expense or overhead and insurance. Forms are also provided for a summary of the total expenses for the year.

Distributed free of charge, the book can be obtained by addressing the Advertising Department, Dodge Division, Chrysler Corporation, Detroit, Michigan. . . . Mention of FLEET OWNER will speed up the service.

New "Economy" Manual

SEALED Power Corporation has announced the release of the fourth edition of its famous "Oil and Gasoline Economy Manual."

Over 120,000 copies of this manual have been distributed. It has been acclaimed by service men as one of the outstanding pieces of educational literature produced in 1940 for the automotive service industry. Thousands of requests have been received for this manual from instructors of high school automotive classes and industrial and government automotive training schools.

While the fourth edition of this manual is basically the same as the last issue, technical information has been brought up to date and some new information has been added. . . . For your free copy mention this announcement in FLEET OWNER, when writing to Sealed Power Corporation, Muskegon, Mich.

•

Dual Safety Gas Tanks

COMPLETION of plant facilities for increasing production of Diamond Dual safety gasoline tanks to meet the demand, is announced by Russell A. Welch, vice-president and general manager of Allied Equipment Co., 432 St. Aubin, Detroit, Mich.

According to Mr. Welch, safety is a dominant feature in Diamond Dual safety tank design. Without sacrificing the advantages of cylindrical shaped tanks, the entire structure is built as an integral unit, with double shell on exposed sides of tank. The steel plate, which forms the deck, covers cross beams and mounting

brackets and is carried over entire outer section of tank.

The built-in deck plate, Mr. Welch pointed out, replaces the cross-beam construction of conventional tank design, affording the advantages of inside mountings, at the same time adding strength and smooth, streamlined appearance.

Read these Comments about the Tachograph as printed in the Dec. 21st. 1940 issue of "Business Week"

Graphic Clocker

Tachograph charts speed of truck with starts, stops, and time out. Also, it keeps driver safely and legally on job.

Just south of Bloomington, Ill., on route 66, a jaloppy full of boys on their way to a basketball game tried to overtake and pass a big intercity truck, sideswiping it and injuring one of the boys. On the insistence of the youngsters that it was necessary to drive 65 m.p.h. to pass the truck, the boy's father sued the trucking company for $20,000.

It looked like an airtight case for the plaintiff until a chart made by a Tachograph was adduced in evidence by the company, showing that the truck was running at 35 m.p.h. at the time of the accident and had at no time exceeded the speed limit during its operations on the day of the accident. Saving for the Tachograph, $20,000.

• **On Chicago-Minneapolis Run**—Five similar Tachographs, new speed-and-operation-recording instruments, just being put on the market by Sangamo Electric Co., Springfield, Ill., have been making test charts on trucks operating between Chicago and Minneapolis.

Before installation of the recorders, the truck drivers had been taking an extra hour or two for lunch and dinner, making the run in 14 to 16 hours; since then, they make the trip consistently, and well within speed limits, in 11 hours.

• **More Than Records**—Briefly, the Sangamo people describe their new Tachograph as "an instrument for truck operation, incorporating a speedometer clock, odometer, speed change counter, and signal light." Actually it seems to be something more. On a day's run from Chicago to Springfield, for instance, the recording chart (see illustration) graphed automatically and indelibly the time of departure, lunch time, time out for repairs, time of arrival, and all the speeds used in making the run.

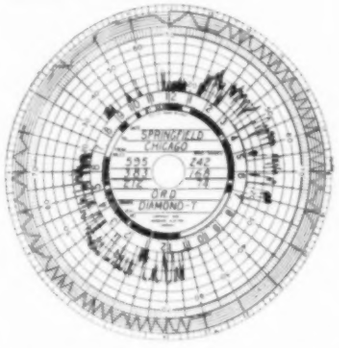
What it didn't print, because it didn't need to, was a friendly, impersonal pressure on the driver to keep himself and his truck safely and legally on the job.

• **Three Charts in One**—The instrument mounts on the dash of a truck or bus, replacing the original speedometer, but connecting to the speedometer shaft. Electrical leads connect with both the ignition and the dash-light circuits. The clock revolves a sealed-in circular chart once in 24 hours. On the surface of the chart ride three inscribing styluses, two being actuated by the speedometer-odometer mechanism to record the number of miles traveled and the speed. The third stylus is actuated by vibration when the vehicle is in motion, indicating whether the engine is stopped or running, by relative position of the graph. If the driver has a bright idea of disconnecting the speedometer shaft to break up the record he will be disappointed, because the clock and the third stylus will go on operating.

Mounted on the dashboard of a truck, the Tachograph not only takes the place of a speedometer, but keeps a complete record of the trip as well

TACHOGRAPH RECORD

The Run from Chicago to Springfield, Ill., and Return



Analysis of Record on Downstate Trip (Top half of circle)

Distance	Time	Place	Remarks
0	8:22 a.m.	Chicago	Inserted Chart.
0	8:35 a.m.	Chicago	Left garage.
8¼	9:09 a.m.	Customer's warehouse	Unloading time 41 min.
11¼	10:04 a.m.	Garage	28-minute wait for mechanic.
	10:32 a.m.	Garage	Trial run with mechanic. Repair time 1 hr. 2 min.
13¼	11:34 a.m.	Garage	Left garage for test run of 2 miles.
15¼	11:45 a.m.	Garage	Left garage proceeding to restaurant. Arrived at 12:41 p.m., stopping 34 min.
27	1:15 p.m.	Restaurant	Began return run via Route 4A to Joliet.
56	2:05 p.m.	Joliet	17 minutes through Joliet traffic.
105	3:30 p.m.	Odell	Stopped 22 minutes.
147	5:06 p.m.	Bloomington	16 minutes through Bloomington and Normal.
195	6:28 p.m.	Elkhart	Stopped 12 min., leaving at 6:40 p.m.
212	7:14 p.m.	Springfield	Chart removed at 7:23 p.m.

Clip and Mail Coupon NOW for complete information on the

SANGAMO TACHOGRAPH

--the recording speedometer that automatically records graphic log of SPEED, TIME and DISTANCE . . . . . .

Manufactured by
SANGAMO ELECTRIC COMPANY
Distributed by
WAGNER ELECTRIC CORP.

AUTOMOTIVE PARTS DIVISION S41-3 FO
Wagner Electric Corporation
6480 Plymouth Ave., St. Louis, Mo., U. S. A.
_____Please send a copy of "Savings & Safety."
_____Have your nearest branch call on us regarding the Tachograph.
Name and Position _____
Company _____
Address _____
We operate _____ trucks.

Ramco Piston Ring Sets

RAMCO'S new "Engine Rebuild" piston ring sets, recently announced, are for use in connection with new pistons and reconditioned cylinders in either rebore jobs or rebuilt motors.

Each set includes a one-piece tapered compression ring, a low-pressure

spring-type compression ring, and a spring-type channel oil ring of new and improved design. All cast-iron parts of these rings are chemically coated to prevent rust and to eliminate friction during the break-in period.

This new combination is said to have a pre-determined low wall pressure comparable with that of Ramco "10-Up" rings. Sets are now available for 11 popular cars and trucks. For more details write to Ramsey Accessories Mfg. Corp., 3712 Forest Park Blvd., St. Louis, Mo., mentioning FLEET OWNER, please.

•

Bolser Filter Cartridges

THE BOLSER Corporation, Cedar Falls, Iowa, makers of truck flares and safety equipment, announces a new universal filter cartridge, said to be applicable to all popular makes of oil-filters.

The new Bolser cartridge is adjustable to different sizes, and is readily

repackable (by the user) with special cotton waste from his bulk stock. Half of the amount of waste required is placed in the cover of the cartridge, which comes in two parts, the other half being placed in the bottom. A special locking-ring arrangement permits adjustment to different lengths.

The new cartridge also features a self-contained sump for the collection of sludge and other foreign matter. Special cotton fibre waste is furnished in 6-oz. and 8-oz. packages; also in 50 and 100-lb. bales, together with a special scale that quickly indicates the amount waste required per filter.

For further details, prices, etc., address The Bolser Corporation, Cedar Falls, Iowa, mentioning FLEET OWNER, if you please.

•

New Wayne Computing Pump

THIS is the new Wayne Model 100 computing pump, offered as their "golden anniversary" contribution to the oil industry, which they have served for over 50 years.

This is said to be an entirely new pump for the dispensing of gasoline. For instance, they started with the Wayne "Flexi-Reel" and built the pump around it. The reel operates horizontally, and is so designed that it is always pulled out straight, regardless of the direction in which it is pulled. The hose comes out at filler-cap height. It has adjustable tension

and latches automaticaly every 8 to 10 inches; it retracts with a slight outward pull.

The new streamlined housing is light and strong, and is much lower. Totalizers are now located in the dial, of the "high-vision" type, with curved bezels and stainless-steel trim. Number of gallons, price per gallon and total sales price are indicated.

Base of the pump is a heavy foundation and interior construction is simple. Access to all parts is controlled by a single key. All units rest on steel cross-members. The pump is 63½ inches high and the base occupies about the same area as other pumps, being 20⅞ inches deep by 27-5/16 inches wide.

The pumping unit is of the "Centurbi" type—a design having advantages of both centrifugal and rotary pumps, and said to have the disadvantages of neither. It combines a turbine and centrifugal action and is self-priming. . . . For more details address The Wayne Pump Company, Fort Wayne, Ind., mentioning FLEET OWNER, please.

B-L Fast Battery Charger

THE new B-L "Supercharger" is a battery charger of the new "fast" type that tests and charges batteries, *quickly*, without removing them from the vehicle.

The meter is simplified, and will indicate any or all of the following: "Defective battery, sulphated battery, battery with low capacity, or a fully charged battery. If the battery is sulphated, the "discharge unit" of the Supercharger can be used to clean the battery of sulphation. Charging can be done rapidly, while the vehicle is being lubricated, having its flat tire repaired, etc.

Long, heavy cables, with clips, are provided to reach the battery terminals in the vehicle. Charging is automatically controlled by a time switch. The instrument panel is simple and easy to read and contains complete instructions so that anyone in the shop can operate it.

For further information regarding this "portable battery department", address The Benwood-Linze Company, 19th & Washington Ave., St. Louis, Mo. . . . Mention of FLEET OWNER always helps.

•

New Synthetic Rubber Book

A NEW illustrated eight-page booklet on the new "Hycar" group of synthetic rubbers, manufactured by the Hydrocarbon Chemical and Rubber Company, Akron, Ohio is now available upon request to the manufacturer. It should appeal to everyone interested in the general subject of synthetic rubber. The booklet is written in non-technical language, and is easily understood by those not directly in the rubber field.

Hydrocarbon Chemical and Rubber Company was jointly formed last year by The B. F. Goodrich Company and the Phillips Petroleum Company

The booklet relates how the Hycar type of synthetic rubber is handled like natural rubber, describes the physical characteristics of Hycar O. R., an oil-resistant type of synthetic rubber, lists the comparative properties of Hycar O. R. and natural rubber, and pictures some of the steps in the manufacture of Hycar.

Blackhawk Wrench Manual

BLACKHAWK has recently issued a new 40-page wrench manual that should bring you up-to-date on modern hand tools for automotive use.

It shows many new developments in socket, box-type, open-end and tension wrenches. A review of the new book reveals major additions to the

line of the popular "Nugget" socket wrenches, having 7/16" drive, as well as the popular Blackhawk socket assemblies with ⅜" and ½" drives. There are also many special wrenches for certain items on different cars and trucks.

Larger and smaller wrench sets and units feature ¾", 1" and ¼" drives, for all types of work—automotive or otherwise. All of these wrench assortments are illustrated and described in this 40-page manual, available free by writing to Blackhawk Mfg. Co., Milwaukee, Wis. . . . You'll mention FLEET OWNER, won't you?

•

New Valvoline "HPO" Oil

AFTER making exhaustive field and laboratory tests on different types of trucks—both gasoline and Diesel, Valvoline Oil Company, Cincinnati, Ohio, announces a new high viscosity-index Pennsylvania motor oil, as an all-around "peak-load" lubricant.

The new heavy-duty oil is known as Valvoline "HPO" (high power output) and is said to lubricate well at extreme temperatures and to minimize the formation of oxidation varnish, as well as cleaning the motor of sludge as it lubricates.

"HPO" contains an oxidation inhibitor as well as a detergent agent.

The refiners do not claim that the new oil will not oxidize, although its oxidation point is very high. They do claim, however, that the new oil eliminates the results of oxidation by its detergent action, which keeps the products of oxidation in suspension, without sacrificing any of its lubricating qualities.

The problem of bearing corrosion has also been overcome in the new oil, it is stated, tests showing that even under the most trying conditions the new oil shows no tendency towards corroding any type of bearing metal.

That the new Valvoline "HPO" oil has been developed under actual working conditions should be of interest to fleet men, many of whom have been conducting tests on their own equipment in an endeavor to find the answer to peak-load lubricating problems.

A wealth of interesting data on fleet lubrication problems has been gathered by Valvoline during recent months, including many fleet case-histories. . . . For copies of this free literature address Valvoline Oil Company, 579 E. Fifth St., Cincinnati, Ohio, mentioning FLEET OWNER, please.

•

New Metallizing Gun

THE Metallizing process is recommended by the sponsors for the restoration of worn machine parts of all kinds, such as bearing surfaces, shafts, etc., in practically any kind of metal or alloy. It is also suitable

for the application of corrosion-resistant metal coatings.

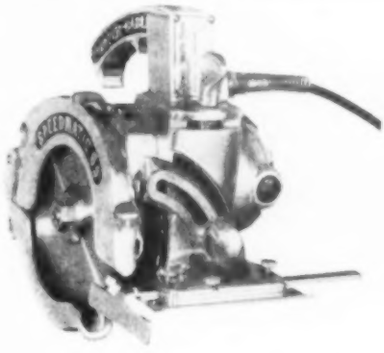
Application is achieved by means of the gun illustrated, into which metal wire is automatically fed, from whence it is melted, atomized by compressed air, and sprayed onto the base material.

The gun may be used as a hand tool, for coating or building-up all types of metals. An adjustable automatic wire feed is featured. A universal gas head permits the use of any commercial gases for the melting operation.

This process was introduced in this field several years ago. What makes this announcement news is the fact that a brand-new type of gun has been developed, said to be a marked improvement over the old one, in both operation and results. . . . For further particulars address Metallizing Engineering Co., Inc., 21-07—41st Ave,. Long Island City, N. Y. . . . You'll mention FLEET OWNER, won't you?

New "Speedmatic" Saw

THE Porter-Cable Machine Company, Syracuse, N. Y., announces an addition to their line of Speedmatic saws. The new machine carries a 6½-inch diameter blade with cutting capacity for 2-inch material,



yet weighs only 15½ pounds. The blade travels at a speed of 7,200 r.p.m., producing a cutting edge speed in excess of two miles per minute.

Through the use of a helical-cut gear drive, 98 per cent of the motor power is transmitted to the driveshaft, according to the maker. A ⅝ h.p. universal motor is used. The base raises and lowers for depth adjustment, and tilts to 45 degrees for bevels. A cast-in graduated scale affords quick and accurate setting. The frame is die-cast aluminum. This job is known as Model K-65.

Standard equipment includes a combination saw blade, ripping guide, cross-cutting guide, 15 ft. insulated cable with plug and socket, metal carrying-case and blade-change wrench. . . . For more details address Sam Mellor, c/o Porter-Cable Machine Company, Syracuse, N. Y., mentioning FLEET OWNER, if you please.

•

K-D Triflex Reflectors

THE K-D Lamp Company, Cincinnati, Ohio, is offering a line of K-D Triflex reflectors for all vehicles; also as replacement rear lamp lenses.

These reflectors are composed of innumerable reflecting surfaces or facets, which make up the back of

the reflector. They are built under Stimson patents. They are made of special glass, or plastic. The outer surface is smooth and is easily cleaned by passing the hand or a moist cloth over it.

For your free copy of the K-D Lighting Equipment Catalog, address K-D Lamp Company, Cincinnati, Ohio. . . . We always appreciate it when you mention FLEET OWNER.

Extinguisher "Telltale"

THE national need for *uninterrupted* production demands that fire extinguishers be kept ready for emergency use. They must not be tampered with. After use, they must not be returned *empty* to their brackets. They should be inspected often.

To facilitate frequent inspection and to tell *at a glance* whether pump type extinguishers have been tampered with or used, Pyrene "Gardeseals" have been introduced by the Pyrene Manufacturing Company, Newark, N. J.

These are bright red, trade-marked, visual signals or handle seals that are destroyed the moment an extinguisher is taken from its bracket. They are easily applied by soaking in water and placing over handle and bracket; they shrink to a tight seal in an hour. Packed 25 seals to a carton. . . . Write to Pyrene Manufacturing Company, 560 Belmont Ave., Newark, N. J., for more details, mentioning FLEET OWNER, please.

•

Bearing and Bushing Catalog

JOHNSON Bronze Company, New Castle, Pa., announces their newest catalog on stock sizes of bronze bearings, bushings and cored bronze bars.

Many new, important changes have been made in the line this year, including new sizes of plain bearings, new types of electric motor bearings, etc. The makers declare, also, that every item listed in the new 76-page

catalog is available, immediately, from stock maintained in strategically located warehouses as well as distributors from coast to coast.

In addition to bronze bearings, the line includes graphited bronze bushings and bearing babbitt. Size and application data, both, are featured in the new catalog, which is conveniently indexed. . . . For your free copy write to Eugene Scanlon, c/o Johnson Bronze Co., New Castle, Pa., mentioning FLEET OWNER if you don't mind.

•

New A-C Gas Strainer

A GASOLINE strainer that keeps minute particles of foreign matter from entering the carburetor, has been developed by engineers of the AC Spark Plug Division of General Motors, Flint Mich. The strainer, contained in a heavy glass bowl, is installed in full sight on the fuel line. It traps all water and particles of dirt and rust, eliminating carburetor trouble caused by plugged jets and screens, according to the makers.

The device, which has been designed in two types, one for cars and one for

trucks, prevents clogging of carburetor jets and helps to maintain correct fuel mixture.

The strainer is easily installed at the carburetor inlet without interfering with other motor accessories. It gives thousands of miles of service before a simple cleaning operation is required. The strainer assembly is composed of a stack of self-spacing brass discs with openings of only two-thousandths of an inch in width.

•

New Radiator Cleaner

EASE of application is one of the features of "Rust Master", the deoxidizing solution that both prevents and removes rust in automotive cooling systems.

With Rust Master, draining and flushing, it is claimed, are entirely eliminated. All that is necessary is to pour the contents of one can into the water in the radiator. Nothing more has to be done. Rust Master works as the vehicle rides. Within 1,000 miles of driving, the rust in the

cooling system is completely dissolved and the entire system rust-proofed for one year, according to the manufacturers.

Containing no caustics or acids, Rust Master is harmless to the cooling system, and also to paint and hose connections. It does not cause overheating or clogging, due to rust or scale and does not affect any antifreeze, the makers state.

For more details address Rust Master Chemical Corp., 712 Beacon St., Boston, Mass. . . . We always appreciate it when you mention FLEET OWNER.

•

New "Trouble Shooter"

THIS new electrical "trouble shooter" checks all electrical parts on a motor vehicle in but 15 minutes, according to the makers.

It features a micro-sensitive leak detector, operating on a high-frequency circuit, that indicates exactly where any electrical leakage is taking place. A d.c. voltmeter enables the mechanic to check voltage of battery, generator, lighting and starter circuits.

This new analyzer is built into a heavy steel case, finished in crystalline black, furnished with tie-rod hanger handle. The panel is of etched

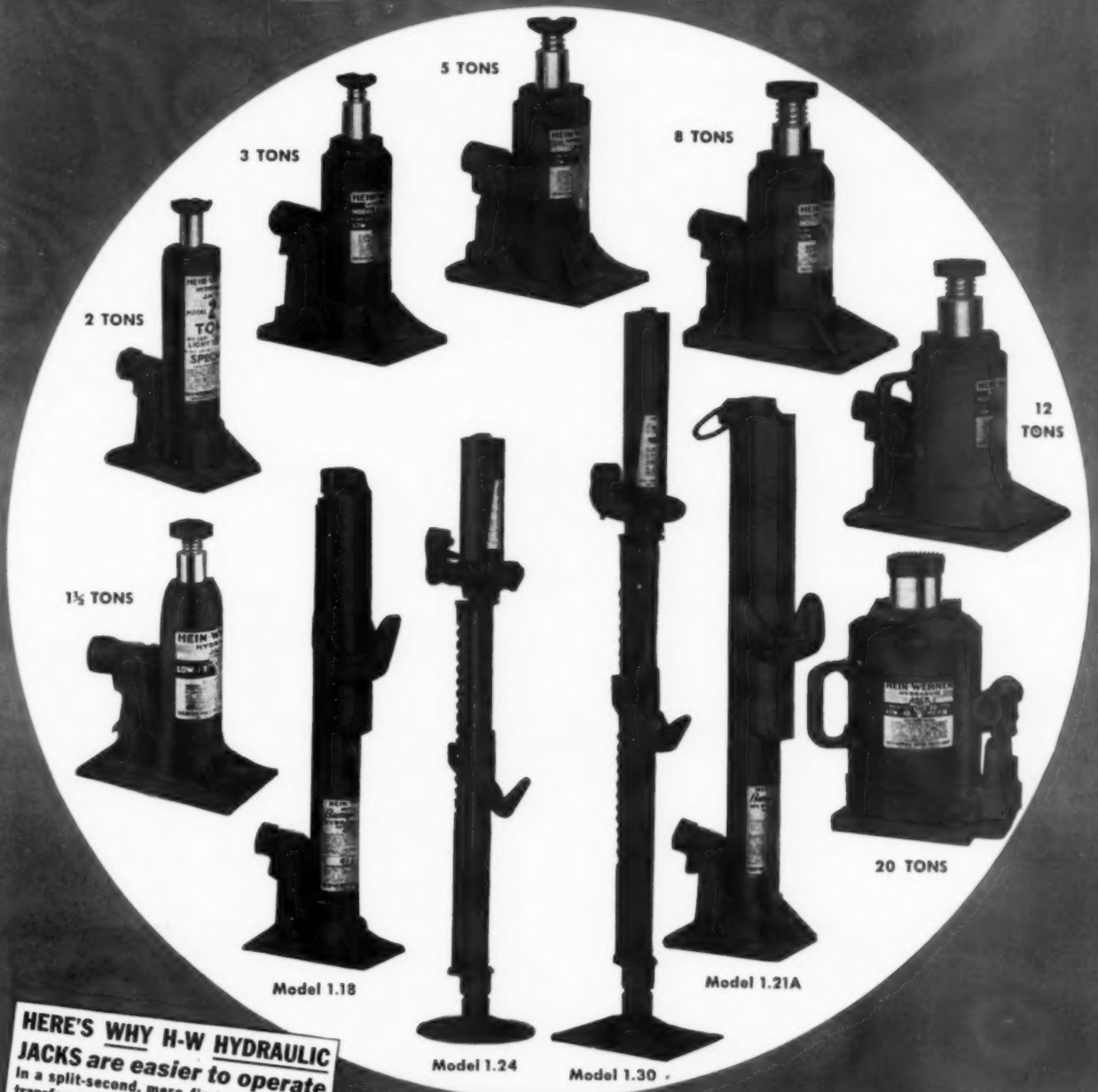
aluminum. All necessary leads and completely illustrated operating instructions are furnished.

For more details address Electro Products Company, 621 E. 216th St., New York, N. Y., mentioning FLEET OWNER if you don't mind.

SAVE TIME and MONEY

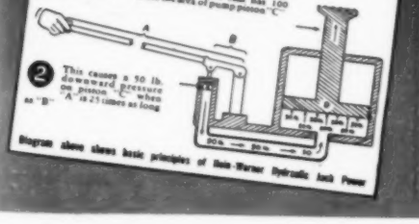
by equipping your fleet with super-powerful, easy-operating

HEIN-WERNER HYDRAULIC JACKS



HERE'S WHY H-W HYDRAULIC JACKS are easier to operate

In a split-second, mere finger pressure is transformed into a lifting force of several tons


1
Exert a 2 lb. pressure on hand ended jack handle "A".
2
This causes a 50 lb. downward pressure on piston "C" when "A" is 25 times as long as "B".
3
Which becomes a 2½ ton upward force on the ram, since the lower surface of the ram has 100 times the area of pump piston "C".
A
B
C
Diagram above shows basic principles of Hein-Werner Hydraulic Jack Power

It sure pays to have a Hein-Werner Hydraulic Jack in the truck tool kit—ready for instant use. It makes tire changing a lot easier, and it saves a lot of time.

Complete H-W line includes 1½ ton capacity *hydraulic* jack at only $3.15 . . . 2 ton model, $3.55 . . . 3 ton model, $7.30 . . . 5 ton, $9.40 . . . 8 ton, $12.30 . . . 12 ton, $18.35 . . . 20 ton, $30.00. (All prices are net to dealer, and slightly higher on West Coast).

Hein-Werner also makes Bumper-Lift Hydraulic Jacks for passenger cars, and a full line of Service Jacks of 1½, 1½, 2, 3 and 4 tons capacity. Also SAFE-T's (non-adjustable horses) of 5 and 10 tons capacity.

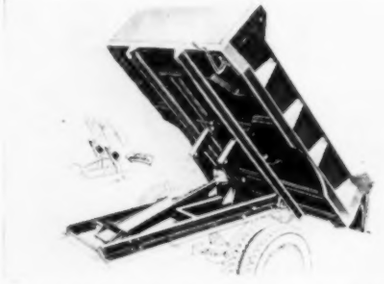
For details and latest prices, ask your H-W jobber, or write us

HEIN-WERNER MOTOR PARTS CORP.

Waukesha, Wisconsin

Improved Dump Body

THE ANTHONY Company, Streator, Ill., announces improvements in their line of low mounted, hydraulic hoist dump bodies, to prevent both "over-run" and "kick-back."



Use is made of special rubber insets to replace the restraining chains or springs usually used. These are lighter in weight and are said to be positive in operation.

Other features common to the line of Anthony dump bodies include low loading-height, push-pull dash control, telescopic sub-frame and double-arm power-speed hoist. For complete literature write to The Anthony Company, Streator, Ill., mentioning FLEET OWNER, if you please.

•

Aviation Cleaning Handbook

THE MAGNUS Chemical Company, Inc., has issued a new descriptive, illustrated 24-page booklet for aviation use, "The Aviation Cleaning Handbook."

The Handbook thoroughly describes cleaning methods and materials for use in the maintenance of aircraft, airports, engine shops, etc. It is written for all those concerned with safer, more efficient operation and maintenance of aviation equipment.

A few of the cleaning problems discussed in the aircraft section of the Handbook are the cleaning of wings, fuselages, dismantled motors, prevention of sludge in motors and stripping finishes.

In the section devoted to cleaning

operations in and around airport buildings and shops, such problems as cleaning cement floors and runways, machinery, interiors of buildings and cleaning and protecting workers hands are discussed.

The Aviation Cleaning Handbook is attractively bound in aluminum and blue covers, and makes a fine addition to one's reference file. . . . Those wishing a copy of the Handbook may obtain it by writing to the Magnus Chemical Company, Inc., Garwood, N. J. . . . Mention of FLEET OWNER always helps.

•

New Gillette Tire Line

GILLETTE Tire Division of U. S. Rubber Company announces three new passenger-car tires, two new truck and bus tires, and a complete new line of tubes.

The Gillette Super Ribbed is offered in both cotton and rayon and is called the leader of their truck and bus line. This tire is illustrated. It features a thick, wear-resistant tread, ribbed and studded tread design, impact-resisting cord body, latex heat-insulation, and heat-resisting rubber layers between the cord plies, plus ventilated buttress treatment to get rid of heat on long-haul, high-speed operations.

The truck and bus tire line also includes the Gillette Bear, a heavy-service tire for the mass market. Also the Gillette Super Delivery, for stop-and-go service; and the Gillette Super Traction, for farm and rural use.

The passenger-car line includes the Gillette Ambassador in both cotton and rayon, and the new Gillette tire for the mass market. The tubes come in five lines, as follows: Ambassador, Gillette, Bear Heavy-Duty, Truck and Bus, and Bear Truck and Bus.

•

New Wrinkle Finish

THE ROXALIN Flexible Lacquer Company, Elizabeth, N. J., has issued a 4-page bulletin on *"Rincontrol,"* their new wrinkle finish. . . . This 8½ x 11 bulletin includes a sample finished panel and illustrates and describes eight exclusive Rincontrol features. . . . Also shown are several outstanding products using this latest in textured enamel finishes.

New Autopulse Strainers

AUTOPULSE Corporation, Detroit, Mich., announces a new line of fuel strainers, conventional in design, except that the bowls may be obtained

in drawn steel or brass, instead of glass, thus avoiding danger of breakage from tire-thrown rocks, etc.

The line contains four strainers: One with die-cast body and glass bowl; one with drawn steel bowl; one with forged-brass body and glass bowl; and one with drawn steel bowl and brass body.

All pumps are now in distributors' stocks, according to the makers, who will be glad to send more details on request. Write to Autopulse Corporation, Detroit, Mich., mentioning FLEET OWNER, if you don't mind.

•

New Heil Tank Catalog

COMPLETE data on truck tanks is presented in the new Heil Tank Catalog, illustrated here.

This colorful catalog contains over 100 illustrations of modern truck tank equipment, as well as "blue-print" drawings and dimension sketches. Complete specifications of all Heil truck tanks are also included.

The new catalog is divided into six sections, as follows: (1) Streamlined Tanks. (2) Deluxe Tanks. (3) Conventional Tanks. (4) Refueling Tanks. (5) Trailerized Tanks. (6) Features of Heil Tanks.

For your free copy of this new tank catalog address The Heil Company, Milwaukee, Wis., mentioning this announcement in FLEET OWNER, if you please.

Why Rear-Ends Fail

(*Continued from page* 46)

By that time the teeth of both gear and pinion have been polished to a perfectly mating fit with an extremely tough, work-hardened surface. As long as the proper adjustment of related parts is maintained and the gears themselves are not subjected to abusive loads sufficient to break down the lubricating film, they may be expected to render quiet, unfailing service.

•

Abrasive Standardization

PRINTED copies of the third revision of Simplified Practice Recommendation R89, "Coated Abrasive Products," are now available, according to an announcement of the Division of Simplified Practice, National Bureau of Standards.

As originally promulgated in 1928, the recommendation listed 1,976 varieties of coated abrasives, of which 1,923 were class 1, or stock items, the remainder being class 2, or non-standard, items for specific purposes. A survey made by the industry in 1927 to provide data upon which to base the recommendation disclosed more than 8,000 varieties of coated abrasive products then on the market.

Subsequent revisions, in 1932 and 1936, listed 1,863 and 1,868 stock varieties, respectively, and the current revision reduces the number to 1,755, or less than 22 percent of the varieties manufactured prior to simplification.

Copies of this recommendation, which is designated as R89-40, may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents each.

•

How to Install Glass

(*Continued from page* 48)

nine is comprised of the cutting off of the excess stripping material that has just been pinched with the pliers.

Step number ten is for the purpose of taking care of round corners on irregular-shaped windows, such as on "no-draft" type of ventilators used on passenger-cars, especially at the front. This step is illustrated in the right-hand picture at the bottom of the page, which shows how the operator has made a round corner by simply laying the strip of material around the edge of the glass, preparatory to pushing the glass into the channel by hand, as shown in the picture.

And that's about all there is to it, according to Mr. Walker. It will be noted that this method requires only *hand* pressure, without the use of pounding or excessively hard driving or other high pressure. It is said that this feature eliminates the most common cause of breakage in setting new glass.

This process should also come in mighty handy in re-setting old glass. Many operators, in the past, have been troubled with "frosty" windshields, the part of the glass in the area travelled by the windshield-wiper blade often becoming scratched from dirt, dust, sand, etc. Where square (rectangular) windshields were used in the past, many fleet men would have liked to reverse the glass, but hesitated to do so because of fear of breakage in re-setting. The advent of this new method should simplify the problem somewhat, but it is also possible that many windshield glasses will not readily lend themselves to this type of reversal, because of their irregular shape.

However, the method herein described is said to be the one used by many of the leading car, truck and aircraft manufacturers, and is offered for whatever it may be worth. Fleet men who'd like to get more information regarding the stripping material illustrated are invited to drop a line to the Editor. You may use the postcard which is bound into this issue, if you care to; just write across the face of it "*Glass Stripping Material*", or something like that, and we'll be glad to see that data is sent without obligation.

THE GUTS OF YOUR OIL FILTER IS Worth 15c

BUT YOU'VE BEEN PAYING UP TO $1.50 BECAUSE IT'S PACKED IN A "ONE SHOT" CONTAINER

Bolser RE-PAK-IT cartridge—Heavy gauge steel for lifetime service.

You can stop this needless waste—by using a Bolser RE-PAK-IT Filter Cartridge. You use the cartridge over and over again—simply repack it with Bolser High Efficiency Filter Fibre—at an average cost of 15¢ a change! It's the same material found in the better—more expensive—filter replacements. If you are a qualified fleet owner *write for a sample RE-PAK-IT cartridge*—and you'll *see for yourself.* Just tell us what filter you are now using. No charge—and no obligation.

BOLSER CORP., CEDAR FALLS, IOWA

Manufacturers of BOLSER FLARES AND SAFETY EQUIPMENT.

"ONLY SURE WAY

OF CONTROLLING TIRE PRESSURES"

Says Noted Tire Engineer About Air-Sealing Tire Valve Caps

MR. LEMON GREENWALD

Twenty-five of Mr. Greenwald's forty years in the tire industry have been devoted to special engineering and service work connected with fleet operation. He is tire consultant for Fifth Avenue Coach Company, New York City Omnibus Corporation and Chicago Motor Coach Company.

Lemon Greenwald
Tire Consultant

Akron, Ohio
January 22, 1941

A. Schrader's Son
407 Vanderbilt Ave.
Brooklyn, N. Y.

Gentlemen:

TIRE VALVE CAPS

You are to be complimented on your advertisement in the leading magazines illustrating Schrader Valve Caps, but you have not put enough emphasis on some of the features with which the public should be accualnted.

Operation of tires at lower than recommended inflation results in excessive tread wear, and in many instances, injury to the beads and carcass. Tire engineers can quite accurately determine in advance the percentage of mileage loss that will result from under inflation.

More energy or power is required to move a vehicle on 'soft' tires, consequently, more economical fuel cost will be enjoyed if tire Valve Caps are used to prevent loss of air pressure in the tires.

Foreign matter so small as to be difficult to see with the naked eye, getting into the inside mechanism of a tire valve, will prevent a tight seal. The leak of air pressure may be very slow but sufficient to lose several pounds within a week. A similar leak may develop from a damaged gasket of the inside valve mechanism due to extremely high temperature so common with the operation of vehicles at high speed during hot weather.

In the larger cities where the tire service is handled by trained men, very few tires on buses and taxicabs are without Valve Caps because they are consistently used to reduce street delays to a minimum and the cost per tire mile is also important.

After almost 40 years experience in the tire industry-approximately 25 years of which have been given to a close study of tire construction and special service connected with large fleet operations throughout the country, it has been my observation that the use of tire Valve Caps is the only sure way of closely controlling the inflation pressure of tires which is so necessary to maximum performance and mileage.

Yours very truly,

L.Greenwald

LG:DB

SEALS THE TIRE VALVE AT THE MOUTH

The metal reinforced rubber washer of the standard cap seals the tire valve right at the mouth. All tire valves need this protection.

ALWAYS REPLACE THE CAP

Sell replacements for missing caps and always put them back after inflation, or repair work. Attention to this important service builds good will.

Schrader

REG. U.S. PAT. OFF.

TIRE VALVE CAPS

A. SCHRADER'S SON — BROOKLYN, N. Y.

Division of Scovill Manufacturing Company, Incorporated

Facts About the Private Truck Owners Council

THE National Council of Private Motor Truck Owners, Inc., was organized in the summer of 1938, following investigation over a period of more than a year of the need for such an organization. This investigation was conducted by a number of business and national trade association executives representing private truck ownership in agriculture and industry.

At the completion of the investigation, it was mutually agreed that, because of the divergent interests represented in existing organizations, the only effective means of uniting and making articulate the ownership of private motor trucks would be through a national organization devoting all of its energies exclusively to the problems of the Private Motor Truck Owners. Private truck owners then—and now—operate 86 per cent of all the motor trucks registered in the United States. This large segment of the trucks of the United States was unorganized and without adequate representation until the National Council of Private Motor Truck Owners was formed.

In September 1939, the Council established headquarters in Washington, D. C., and engaged a full-time managing director. Since the Council was organized in the summer of 1938 it has:—

1. Made articulate, for the first time in the United States, the ownership of 3,600,000 private trucks representing 86 per cent of all motor trucks in the United States.

2. Organized and led the opposition of Private Motor Truck Owners to ICC regulation similar to that previously applied only to common and contract carriers; presented testimony at numerous hearings in the Ex Parte No. MC-3 proceeding, participated in the oral argument and obtained numerous important modifications and exemptions applying to private truck operations.

3. Vigorously opposed further extension of restrictive Federal regulation of private trucks, including the vicious "Commodities Clause", proposed in the Wheeler-Lea Bill S.2009 (a "railway aid measure") and, previous to its passage as the Transportation Act of 1940, obtained the elimination of the major objectionable features in this proposed legislation.

4. Provided, for the first time, a national clearing house for the collection and dissemination of information of vital interest and concern to all Private Motor Truck Owners.

5. Affiliated numerous national trade associations and existing state associations of Private Motor Truck Owners.

6. Has obtained recognition by the Interstate Commerce Commission, the Wage and Hour Board, the Temporary National Economic Committee, the Congress and other Federal Bodies as the national organization exclusively representative of Private Motor Truck Owners.

In the one-year period from December 1, 1939, to November 30, 1940, Council headquarters issued 88 bulletins—a distribution of about 16,000 pieces—covering a wide variety of subjects of interest and concern to Private Motor Truck Owners; produced and distributed numerous publications, surveys, reports, etc., totalling more than 9,000 units; carried on correspondence with members and other private truck owners covering inquiries on legislation and regulation, membership promotion and miscellaneous subjects totalling more than 4,000 units.

In addition, Council headquarters has made and maintained numerous contacts with Federal bureaus and other bodies; conducted meetings for the instruc-

tion of Private Motor Truck Owners with respect to new regulations affecting them; participated in hearings of ICC, Wage and Hour Board, Congressional committees, etc.; assisted in organization and other programs of state private truck organizations, etc.

Council "action", "Information" and "Service" is being directed toward accomplishment of the following objectives:

1. Limitation of the regulation of private motor trucks to safety of operation on the public highways.
2. Prevention of unnecessary burdensome regulation and control of privately-operated trucks by Federal bureaus and by state utility commissions and similar bodies, which regulate the business of transportation by railroads and by common and contract carriers.
3. Resistance to regulation and taxation which penalizes private motor truck transportation, and aids other agencies.
4. Maintenance of reasonable registration fees and gasoline taxes.
5. Dedication of all revenue derived from special motor vehicle taxes to the construction and maintenance of highways in the interests of safety, commerce and national defense.
6. Uniformity in state laws applied to motor truck owners, to be accomplished through cooperation of the States and Federal government—and abolition of Ports-of-Entry and other interstate trade barriers.
7. Complete and uniform license tag reciprocity between the forty-eight States.
8. Adoption and maintenance of highway construction programs consistent with the ability of the taxpayers to pay for them.
9. Voluntary elimination—and not by statute or official regulation—of all but essential movements of commodities on the highways on week-ends and holidays.
10. Administration and enforcement of such laws as are applicable to private owners of motor vehicles by State motor vehicle departments and state highway patrols.
11. Exemption of Private Motor Truck Owners from special fees and taxes designed to tax highway use by those engaged in the transportation business—since their businesses, to which the use of motor trucks is incidental, are already adequately taxed.
12. Wholehearted and unstinted cooperation and support of the National Defense Program.

●

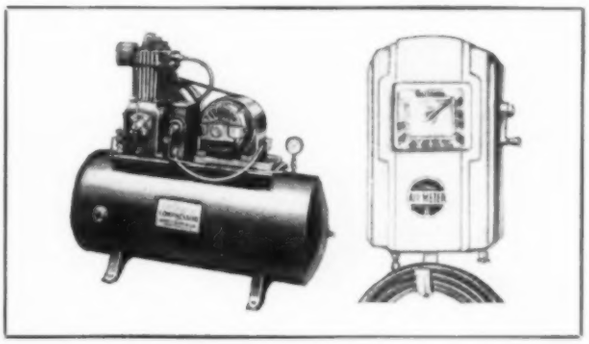
Texas Raises Gross Weight to 38,000 Lbs.

ONE of the most significant indications of a change in public attitude toward highway transportation was evidenced in Austin, Texas, last month when Governor W. Lee O'Daniel signed the 38,000-lb. gross limit law for trucks. This new measure replaces the 7,000-lb. payload limit which has been a highway barrier in the state for over a decade. The Senate approved it by a vote of 24 to 5, and by the House, 118 to 5.

Nation-wide efforts to remove highway barriers were reflected in the legislatures of three other states —Tennessee, North Dakota, and Indiana. Tennessee approved the increase of the maximum gross weight for trucks from 24,000-lbs. to 30,000-lbs. North Dakota increased the gross weight limit on truck combinations from 35,000-lbs. to 40,000-lbs. Indiana increased the gross allowable weight per axle from 16,000-lbs. to 18,000-lbs. and removed the 40,000-lbs. gross weight limit.

No more big bills for free air

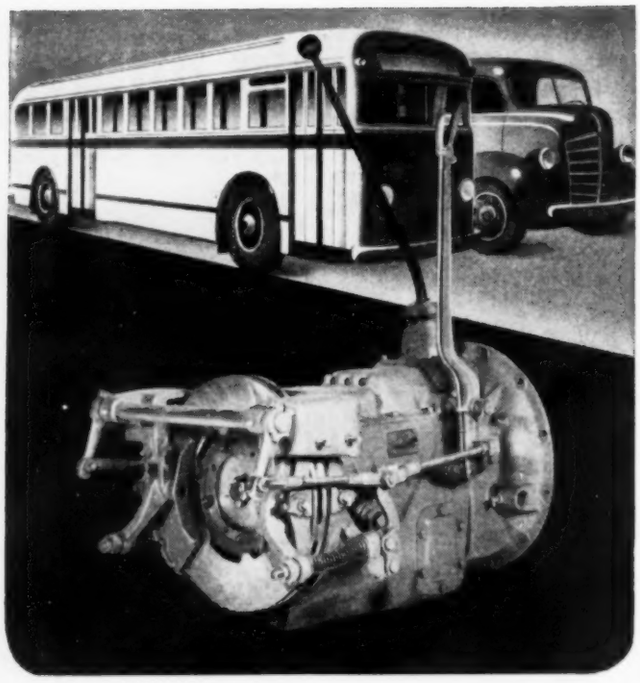
MOTORISTS take air meters and air compressors for granted. But just let your air equipment go sour—and there goes a disgruntled customer! • Smart operators install GILBARCO AIR METERS and AIR COMPRESSORS and stop worrying about the air situation! The name "GILBARCO" automatically insures faultless, dependable equipment! Gilbarco compressors have Timken main bearings – drop forged crank-shafts—totally enclosed centrifugal unloaders. • For *high* efficiency and *low*-cost operation, you can't miss the boat if Gilbarco takes care of your "air department." Send for *Bulletin AM* today!



GILBARCO AIR METERS AND AIR COMPRESSORS

GILBERT & BARKER MANUFACTURING COMPANY

Springfield, Mass. Toronto, Ontario, Canada



ANOTHER MANUFACTURER ENGINEERS TO GIVE YOU THE CONTROL AND SAFETY OF

TRU·STOP *Emergency* BRAKES

This manufacturer of motor trucks and buses is known for sound engineering and management.

Your reasons for having "TRU-STOPS" on your equipment would match theirs because you, too, want:

1. **Your equipment to stop smoothly and safely from any speed.**
2. **To guard your equipment against damage and yourself against damage suits.**
3. **To protect your service brakes from being burned out on long grades.**
4. **To keep down the cost of brake maintenance.**

TRU-STOP *Emergency* BRAKES will do that. They are disc brakes—with nothing to stretch or give. The discs are rugged drop-forgings—ventilated to dissipate the heat of braking that ruins other linings.

You'll find it very much worthwhile to specify TRU-STOP *Emergency* BRAKES when you buy any new equipment.

THE TRU·STOP "VENTILATED" DISC MAKES TRU·STOP EMERGENCY BRAKES SERVE BETTER AND LAST LONGER

AMERICAN CABLE DIVISION
6-235 General Motors Building
Detroit, Michigan

In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.

D.C. Takes "Emergency" Vehicle Census

MOTOR vehicles are being listed for possible emergency duty in the District of Columbia. Police, at the direction of the District Defense Council, have been ordered to leave questionnaires with all persons who operate ambulances, buses or trucks to determine the extent of resources in equipment in case of required evacuation, removal of debris, etc. Filling out of the blanks is entirely voluntary.

●

New (free) Reports on Business Management

PUBLICATION of a second series of reports based on studies of current management problems in American industry was announced recently by the George S. May Business Foundation.

The reports, which are available free of charge upon request, cover the following topics: *An Analysis of the Wholesale Hardware Industry; What I Think About American Business; An Analysis of the Baking Industry; A Study of Labor Cost Control in the Packing Industry; Merchandising Methods in the Milling Industry; Controlling Costs to Prevent Profit Leaks; Selling Problems in the Lumber Industry; A Study of Industrial Supervision; A Study of Belts and Belting Problems; and Cost Measurement as an Aid to Profits.*

The Foundation, which maintains offices in New York at 122 East 42nd Street and in Chicago at 2600 North Shore Avenue, is a non-profit enterprise devoted to carrying on research in the interests of private business enterprise. Study subjects are selected by the Foundation's board of trustees on the basis of their current importance and general interest to business men. . . . Write directly for any of the reports that look like they might interest you.

●

Tire Industry Moves Towards Simplification

DEALERS and other buyers are now receiving unwrapped truck tires, in sharply increasing quantities, as part of an important industry simplification and conservation program. The elimination of wrapping, of course, in no way affects the quality of the product and the resulting saving in kraft paper is useful.

This step is just one phase of a cooperative tire industry effort in action destined to help the dealer through elimination of waste, through adoption of uniform practices, through reduction in the growing multiplicity of sizes and lines, and through progressive economy.

The national defense program has given a real impetus to industry efforts to simplify production and distribution all along the line. As the result of frequent meetings of the tire industry Simplification Committee, organized by members of the Tire Division of The Rubber Manufacturers Association, several manufacturers of truck tires, who represent a considerable proportion of total industry output, have eliminated wrapping all truck tires. Other companies have stopped wrapping the larger sizes and are extending the practice, and the remaining companies are now considering the question.

The Simplification Committee has been in operation for several years, and comprises a representative cross-section of the tire manufacturing industry. This committee draws upon the sales and technical experts of the industry in tackling problems of direct interest

to dealer, distributor, and consumer. The recommendations of the committee are referred for action to the Tire Division of The Rubber Manufacturers Association.

Eliminating the wrapping of truck tires is only one of many healthy steps taken by the Simplification Committee to help the industry keep pace with the demands of the defense program for the minimizing of wasted effort. At present, the committee is actually engaged in cooperating with the Agricultural Tire Simplification Committee, composed of representation of the leading farm equipment manufacturers and agricultural tire suppliers, in drastically reducing the number of unnecessary sizes and types now being utilized in this rapidly expanding new tire market.

Other active programs involving the reduction of unpopular sizes, as a guide to future design, call for separate studies of all existing truck tire sizes, industrial tires and airplane tires.

The work of the Simplification Committee in eliminating approximately 40% of the individual items in all lines of passenger tires below the "100" level is well known, as is the drastic consolidation effected by the committee of truck solid and cushion tire lines, the reduction of unnecessary passenger mud and snow tire lines, the combination of high pressure and balloon truck and bus tubes and many other "cut-the-waste" programs. The present size simplification activities, and in particular the elimination of truck tire wrappings, keep this industry effort in tune with the times.

●

24 Brashear Drivers Get Safety Awards

TWENTY-FOUR truck drivers employed by Brashear Freight Lines, Inc., St. Louis, Mo., an interstate motor carrier operating in five mid-western states, were recently presented safe-driving awards, as a result of their achievement in safe motor truck operation.

These men worked a total of 41 years without accident, and drove a total of 2,021,800 miles without their equipment or themselves being involved in *any* kind of an accident. The awards ranged from one to five consecutive-year periods, and were based on the avoidance of all accidents, regardless of how slight they might be, or who was at fault.

These drivers are subject to the safety regulations of the Interstate Commerce Commission and the regulatory bodies of the various states in which they operate. Periodic physical examinations must be passed and the men must be familiar with all highway and safety regulations which apply to them. In addition, each man must first work a full year with no lost time, in order to compete for an award.

The value of the achievement is still further realized when it is appreciated that the men must operate day and night in all kinds of weather and traffic conditions, and must be ready for any emergency which may develop.

It is the consensus of opinion of the drivers receiving the awards that their safety success was due to constant attention to their jobs, plus a thorough knowledge of safe-driving practices and good physical and mental condition.

One of these drivers (in fact, the "dean" of Brashear's safe drivers, who won the only 5-year award) attributed his achievements to his wife's constant admonitions to "Get home safely". His name is Charles Kraft, and Mrs. Kraft "shares" his award with a great deal of pride.

Truck-Time is MONEY

Avoid Costly Tie-Ups by Making Quick, Permanent Radiator Repairs

Nothing can tie up a truck quicker or oftener than a bad-acting radiator . . . and a truck that's tied up costs money. You can avoid needless loss of time and the expense of many big repair jobs, by catching radiator leaks with Kester Cored Radiator Solder, as soon as they show up.

Your shop can "fix 'em so they *stay* fixed," with Kester Radiator Solder. That's because the solder itself is freer flowing . . . specially compounded, from virgin metals, to withstand severe temperature extremes of heavy-duty truck service. The core is a special, more active flux . . . just the right kind and amount for radiators.

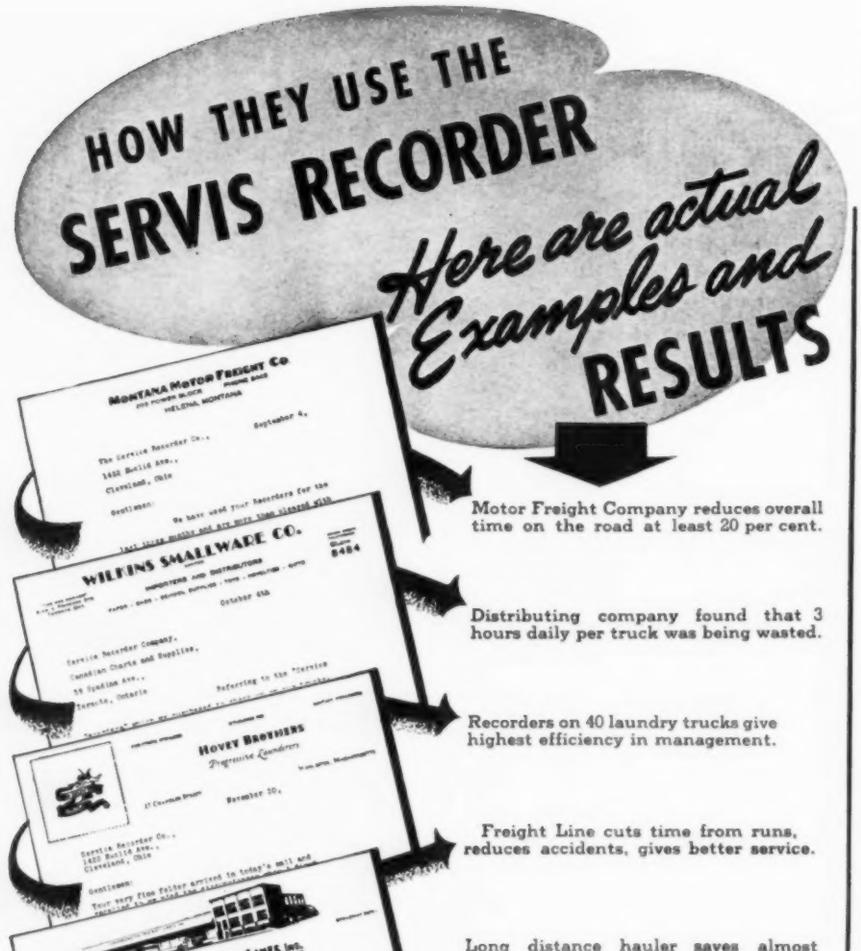
It all adds up to quicker, easier, more permanent radiator repairs that all but eliminate tie-ups due to radiator trouble. Standardize on Kester Radiator Solder in your shop! It will help keep operating costs down. Order from your wholesaler.

KESTER SOLDER COMPANY
4233 Wrightwood Avenue, Chicago, Illinois
Eastern Plant: Newark, N. J.
Canadian Plant: Brantford, Ont.

STANDARD FOR AUTO REPAIRS

●

KESTER CORED SOLDERS


HOW THEY USE THE
SERVIS RECORDER
Here are actual Examples and RESULTS
Motor Freight Company reduces overall time on the road at least 20 per cent.
Distributing company found that 3 hours daily per truck was being wasted.
Recorders on 40 laundry trucks give highest efficiency in management.
Freight Line cuts time from runs, reduces accidents, gives better service.
Long distance hauler saves almost enough first month to pay for Recorders.
However! You can run trucks without Servis Recorders. Many concerns are losing hundreds of dollars per truck per year that way. • Why not save that money—easily.
Write for free booklet: "Ten Ways of Getting More Work Out of Motor Trucks."
THE SERVICE RECORDER CO.
1375 EUCLID AVENUE CLEVELAND, O.

"We Streamline Our Vans"

(*Continued from page* 26)

the cross-members previously installed on the chassis. After both sides have been welded to the chassis cross-members, the roof, which is also fabricated on a special fixture, is picked up by the hoist and fitted into place, secured by riveting. Finally, the front stamped pieces are welded to the front cab uprights, and the joints are ground smooth, filled and made ready for finishing.

Of special interest is the cab interior, also illustrated, in which provision is made for a folding berth, 24 inches wide and 74 inches long. This berth is made of 1½-inch steel tubing, welded together, and is provided with a spring mattress. It is so designed that when not in use, the entire berth can be moved back against the rear of the cab, entirely out of the way.

As is also shown in one of the illustrations, each Mayflower van is equipped with an unusually large quantity of furniture padding, to protect furniture in transit. Incidentally, this padding is also made up in our own shops at Indianapolis.

The finish on these bodies is done in our standard color-scheme, with art-work as illustrated at the head of this article. Paint for body exterior is mixed according to a special formula. It is called "Mayflower Yellow", a color highly visible both during the day and at night.

We regard these vans as a prolific source of advertising, since they travel practically everywhere. Therefore a schedule of frequent repainting and lettering is followed, so that all vans stay attractive-looking and our "story" always stands out and gets plenty of attention.

An adjunct to our body-building department is a pad-making sub-department, in which all of our pads are made of jute and cotton, and each van is provided with 108 of these pads, 24 being 72 x 54 inches in size, and 84 being 72 x 84 inches in size. Soft threads prevent even fine scratches to furniture, and we use thread especially made for us, being extra strong at the same time. These pads, marked with the Mayflower name, are also furnished in sizable quantities to the company's agents.

There is so much more data of general interest to fleet operators, in connection with the operation and especially the maintenance of our fleet, that we shall be very glad to describe and illustrate the highlights of our experiences and accomplishments in an early issue of this publication. A brief résumé of the functions of the Mayflower organization, and how it operates nationally, will also be included, at the request of your Editor.

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I.C.C. Reports On Brake Tests

(*Continued from page* 34)

sample was small) tractor-semi-trailer combinations equipped with air brakes showed braking distances less than those with other types of brakes. Here also, except for the lightest class, braking distances appeared to increase with g.v.w.

It is significant that, in every g.v.w. class and in every type of brake, the best performance observed was considerably better than the I.C.C. brake requirement. However, there was a considerable spread between the best performance and the worst performance observed, in all cases.

The cumulative percentage of loaded tractor-semi-trailer combinations having various brake performance is shown graphically in Figure 4. Any conclusions to be drawn from these data are subject to the same limitations as have been indicated for Figure 3.

The gross weight of loaded truck-full-trailer combinations, as tested, was generally greater than that of the tractor-semi-trailer combinations. Figures were also obtained to show the average braking distance of loaded truck-full-trailer combinations by g.v.w. classes. (See Figure 2). The braking distance appears roughly to increase as the g.v.w. increases.

While certain tables on brake performance in the complete report, based on the James decelerometer, show readings such as "61+", "68+" feet and the like, the actual magnitude of the braking distances can not be determined from these readings. By the use of a recording decelerometer in some special tests on 13% of the vehicles tested, however, accurate braking distances could be computed, and these showed some striking examples of poor performance. In the case of 2-axle trucks, the poorest performance for which a usable record was obtained showed a braking distance of 111 feet; there were four trucks, out of a total of 23 tested with the recording decelerometer, with computed braking distances in excess of 60 feet. In the case of tractor-semi-trailers, the longest computed braking distance was 120 feet. There were 16 with braking distances above 60 feet, 10 above 70, 6 above 80, and three above 90, out of a total of 100 tested.

The great preponderance of all vehicles and combinations observed in these tests, with the exception of truck-full-trailer combinations, were equipped with brakes on all wheels, as required by the I.C.C. regulations for all new vehicles acquired by interstate common and contract motor carriers since July 1, 1937. Table 1 shows the percentage of vehicles without brakes on all wheels, for the main classes observed:

Table 1.—Vehicles Without Brakes on All Wheels.

Type of Vehicle	Total Number Tested	Without Brakes on All Wheels	
		Number	Percent
Bus	682	6	0.9
2-axle loaded truck	146	2	1.4
3-axle loaded truck	17	3	17.6
Loaded tractor-semi-trailer combination:			
Tractor	576	9	1.6
Semi-trailer	576	8	1.4
Loaded truck-full-trailer combination:			
Truck	42	27	64.3
Full-trailer	42	15	35.7

An index to brake maintenance is provided by the balanced or unbalanced condition of brakes. The safety inspectors were instructed to note on their log sheets under "Remarks" every case of unbalanced brakes which they observed. By this means, some data were obtained on this point, but these cannot be regarded as conclusive, since the unbalanced conditions in border-line cases were entirely a matter of personal judgment on the part of the safety inspectors.

It was noted that in a number of districts a high percentage of unbalanced brakes was reported, while in other districts comparatively few were reported. It is believed that these conditions are not purely local, but that in some districts the safety inspectors reported only *badly* unbalanced brakes while in other districts, any *slight* tendency to pull to right or left or to slide wheels unequally was reported. For the reasons stated, it is quite clear that there might have been and very probably were more vehicles having unbalanced brakes than are herein reported.

Table 2 shows the number and percent of unbalanced brakes reported by vehicle or combination type.

Table 2.—Vehicles and Combinations with Unbalanced Brakes.

Type of Vehicle or Combination	Number Tested	With Unbalanced Brakes	
		Number	Percent
Buses	682	45	6.6
2-axle loaded trucks	146	13	8.9
3-axle loaded trucks	17	0	0
Loaded tractor-semi-trailers	576	84	14.6
Loaded truck-full trailers	42	1	2.4

While lack of balance between the braking forces is by no means unimportant, the data shown are not sufficient to form the basis for a judgment as to the effect for various types of vehicles.

During the special instrumentation tests, observations were made from time to time to determine whether or not the brake mechanisms of the vehicles under test were properly lubricated. A suffiicent number of instances were found in which brake mechanism lubrication had been entirely neglected apparently for some period of time, leading to the tentative conclusion that this fault of

BUT . . . Good Training for a Truck Finish!

We run our Kem finishes ragged on this little laboratory "cinder path". Grind the life out of them under its spinning abrasion wheels. Only those that click off the most laps of long life ever reach the comparative rest of riding on your trucks under a barrage of dirt, grit and sand!

That is, if they pass as well many other equally strenuous tests. Our test of adhesion, for instance. A hammering bump machine proves "stick-to-it-iveness" as nothing else can. The Flexibility Test, for another. Here finishes must touch their toes, bent double over a ¼ inch rod—without breaking their backs! Then there's the 95° Humidity Test—given by a coffin-like box where finishes sweat for weeks. Not to forget the Accelerated Weathering Test under a blazing, carbon-arc "sun"!

All of which means tougher, longer-lasting, better-looking truck finishes for you. Something you won't have to prove because we have—under conditions more gruelling than your trucks ever meet on the road!

As for colors . . . see them yourself. Kem Transport Enamel color cards, as well as full particulars, are yours for the asking. Write the Sherwin-Williams Company, Cleveland, Ohio (and all principal cities).

COVER THE EARTH

SHERWIN-WILLIAMS
KEM TRANSPORT ENAMEL

Monmouth *Presents the New* MICRO *Bearing*

FROM the same engineers who produced the first steel-backed, insert-type engine bearings, comes the new MICRO Bearing—

—a triumph of bearing research and precision production
—another great advance in bearing life and performance

The Monmouth MICRO Bearing is the same bearing so widely used as original equipment in the new 1941 cars and trucks—gives *double* the fatigue life of heavier babbitted bearings.

Now available from Monmouth, through NAPA Warehouses and associated jobbers for motors in which it is being used as original equipment. For engine bearings—*Monmouth is the Name!*

MONMOUTH PRODUCTS COMPANY, CLEVELAND, OHIO, U. S. A.

ENGINE BEARINGS • CLUTCH PLATES AND CLUTCH PARTS • KING BOLT SETS

The bearing metal on the Monmouth MICRO Bearing shown here has been cut away from the steel back to attempt to show the thin babbitt lining—only .003 to .005 inch thick, as compared to .012 to .015 thickness in the conventional insert type bearing.

Overall thickness is the same as in the conventional bearing, a heavier steel strip being used to back up the babbitt lining. Steel is of premium quality, held to a tolerance of .0005 inch on thickness.

NAPA Assurance of Quality

Master stocks of Monmouth Engine Bearings are maintained in NAPA Warehouses from coast to coast, assisting hundreds of jobbers in every section of the country to give prompt service even on rarely called-for numbers.

maintenance was not of rare occurrence.

This was observed in various ways; by the sqeaking of brake parts, by the lack of synchronism as between power brake units, both air and vacuum, by the observation of various parts of the brake mechanism including clevises, bell-cranks, etc. While no measurements were made to determine that the lack of lubrication in any instance observed was a contributing factor to poor brake performance, nevertheless, this qualitative conclusion would seem to have been justified in a number of instances.

During the course of the instrumentation tests, observations were also made of a number of instances of ill-selected and poorly installed vacuum brake equipment—ill-selected from the standpoint of having undersize diaphragm capacity to obtain performance corresponding to the I.C.C. requirement, and badly installed from the standpoint of insecure mounting and unduly complicated connections. As a general observation, it appeared that the ill-selected equipment was often badly maintained. While these observations were, as has been stated, comparatively few and qualitative in character only, such items might well be the subject of further elaboration either in other tests, or they might furnish the subject for a special investigation.

Some of the poor brake performance found in the brake tests was doubtless attributable to overloading, but the relationship between brake performance and overloading could not be established because of the lack of accurate knowledge as to the carrying and braking capacity of the vehicles.

For trucks and tractors, there has been (up to the present) no standard method of determining maximum g.v.w. and thereby of permitting determination of overloads. Each manufacturer establishes his own "warranty rating", under which he guarantees his product for a specified period of time against defects in workmanship and material if a given g.v.w. is not exceeded, but this rating does not necessarily prevent the user from overloading the vehicle. The problem in the case of combinations of vehicles is further complicated by the fact that the ratings of trailers are established by the trailer manufacturers, with little or no possibility of relating these ratings to those of the power-units by which the trailers are to be drawn. The actual effect of overloads on brake performance is a subject requiring much further study.

Overloading was not a factor in the case of buses, because the tests upon them were run with a passenger load which was only a fraction of the seating capacity; moreover, as has already been pointed out, overloading is a much less extensive problem in the case of buses, from the standpoint of weight, than in the case of property-carrying vehicles.

Conclusions: From the data obtained in these tests, it may be concluded that:

1. As measured by the James Brake Inspection Decelerometer, the braking distances of the majority of vehicles and combinations tested were greater than the permissible maximum distance for vehicles equipped with brakes on all wheels as set forth in the motor carrier safety regulations of the Interstate Commerce Commission. Numerous individual vehicles or combinations, however, in all types tested, were able to show a braking distance equal to or less than the I.C.C. requirements.

2. Braking distances for tractor-semi-trailers increased as their g.v.w. increased. In the case of 2-axle trucks and truck-full-trailer combinations, this relation between braking distance and g.v.w. also held but not as consistently as with the tractor-semi-trailers, which combinations constituted the largest sample of all property-carrying vehicles.

3. Lack of standard manufacturers' ratings in terms of gross vehicle weight prevents accurate analysis of the effect of overloading upon brake performance. This is particularly

true in the case of combinations of vehicles. Further investigation is needed on this point.

4. Under present conditions, measurement of deceleration as converted to "braking distance", appears to be the most satisfactory method of determining braking performance for enforcement purposes. No change in the present I.C.C. brake requirements (which correspond to those of many state and other agencies) would therefore appear necessary, and enforcement of these requirements will be continued. However, consideration should be given in the future to possible measurement of "stopping distance" as a better index of brake performance, and to the development of proper instrumentation to this end.

Observations made during a portion of the tests tend to show that:

5. Poor maintenance, including inadequate lubrication, contributes to poor brake performance. Operators should give attention to proper maintenance as a means of readily improving this performance in many cases.

6. Use of power-brake equipment of insufficient capacity to handle properly the gross loads carried, contributes to poor brake performance. Selection of equipment of adequate size, with efficient installation, is important.

7. Additional information should be obtained as to: (a) adequacy of brake equipment on typical commercial vehicles and combinations now in use, after proper maintenance; (b) determination of the extent to which proper maintenance improves brake performance; (c) determination of effect of overloading upon brake performance.

8. Further intensive study of the problem of improving brake performance of commercial vehicles and combinations is desirable. Such study should include a broad research program to establish standards of brake performance for vehicles under various conditions of loading and speeds, in which manufacturers, operators, public agencies and others should cooperate.

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Oils and Filters

(*Continued from page* 38)

measurable wear. We found no evidence of acid condition in the oil—although we did not have it analyzed again—as no bearings were pitted and no bright parts of the crankshaft, camshaft, etc., seemed to have suffered from corrosion.

"The inside of this motor was quite clean, with but a slight trace of sludge around the valve-springs. Most of the sludge and dirt seemed to have been removed by the filter cartridges. The oil-pan was black in color, but there was no sticky mess, and no solids to speak of. In other words, this one-year test, running 20,000 miles, with plenty of starts and stops and long idling periods, had thoroughly sold us on the use of oil-filters to the extent that we adopted them for our entire fleet of gasoline-powered trucks. However, we did not stick to the no-oil-change plan, but changed our oil every 5,000 miles—as one of our mechanics used to say, 'whether it needed it or not.'

"Our particular test engine was put together again, after grinding the valves and installing new rings, and as long as we operated the vehicle thereafter, no special trouble developed, and we thought that we had found 'the answer' to our oil problems, enjoying comparative peace of mind for the next few years. All of this, of course, is past history.

"And then someone invents the bugaboo of 'varnish.' Someone else talks about bearing corrosion; still others declare that we need special oils for specific types of operation; while dozens of salesmen pound on the door with special things to put into our motor oil, and we are again in a quandry as to what to do.

"I have read your very interesting survey article on oil-additives, and can appreciate the fact that engine operating conditions are changing. Also that considerable progress is being made in motor oils, and that

Today, more than ever before, your fleet must be rolling every possible minute, "delivering the goods" for America's peace and preparedness. Yet, *your* vehicles must be all dressed up in bright, brilliant beauty.

Lowe Brothers Nepto-Namel gets buses and trucks *out* of the shop and on the road, *in less time, for less money,* because:

It dries dust-free in a few minutes. A truck is cleaned in one morning — the undercoat and Nepto-Namel are applied the same day!

Its smooth mirror-like gloss is easy to clean and retains its original beauty for years. Consequently, fleets finished with Nepto-Namel look better longer!

It's as tough as they come. This rugged finish is highly resistant to bumps and abrasion, as well as the destructive elements such as sun, rain and snow!

Its super-solid content insures faster build and greater opacity. This means more "mileage per gallon" and a saving to you in time, labor and materials!

You can quickly obtain the exact color of Nepto-Namel you need and you get a finish especially formulated for fleet work. Call your Lowe Brothers Jobber or write to THE LOWE BROTHERS COMPANY, DAYTON, OHIO.

Lowe Brothers
AUTOMOTIVE FINISHES
A COMPLETE HIGH-SPEED LINE FOR EVERY PURPOSE
BACKED BY 70 YEARS OF UNSURPASSED QUALITY MANUFACTURE

VALVOLINE

NO-COST Fleet Laboratory Service means . . . .

LOW-COST MAINTENANCE!

VALVOLINE
FLEET LABORATORY SERVICE
Interim Manufacturing Co.
Midville, Penn.
JBS
Crank Case Drainage
Lab.
TEST | REPORT | ADEQUATE | INADEQUATE | TEST | REPORT | ADEQUATE | INADEQUATE
GRAVITY | 27.2 | ✓ | | ASH | 0.39% | ✓ |
FLASH | 285 | ✓ | | PRECIPITATION | 20% | ✓ | *
FIRE | 500 | ✓ | | DILUTION | 40% | ✓ | *
VIS. @ 100° F | 223 | ✓ | | MISSING REANS | 0.38% | ✓ | *
VIS. @ 210° F | 651 | ✓ | | WATER | None | ✓ |
CARBON | 2.24% | ✓ | | | | | * Slightly high – see numbers (over)

You don't spend a penny for Valvoline Fleet Laboratory Service. But it can save many dollars on every truck in your fleet.

Here's why: Our engineers analyze not only your crankcase drainings, but fuel, equipment and operating conditions as well. Then you get *Corrective Service Reports* that locate causes of grief and suggest ways and means of eliminating them. This exclusive Valvoline service, plus Valvoline quality lubricants, is cutting costs for fleet operators everywhere. Ask about it NOW!

75th YEAR — VALVOLINE — 1866 — 1941 — DIAMOND JUBILEE

VALVOLINE—now celebrating FIRST Diamond Jubilee in Oil Lubrication History—created the FIRST All-Purpose Gear Lube, Valvoline "X-18". Greatly reduces inventories—solves fleet greasing problems!

VALVOLINE OIL COMPANY
579 E. Fifth St., Cincinnati, Ohio
New York—Chicago—
Atlanta — Los Angeles
Refinery in Pennsylvania

FREE!
FLEET SERVICE WALL CHART
MAIL COUPON!

VALVOLINE OIL CO., 579 E. Fifth Street, Cincinnati, Ohio.
Send me, without cost or obligation, your new Valvoline Fleet Laboratory Service WALL CHART, enabling me to keep complete record on my trucks for instant reference.

NAME_____
COMPANY_____
ADDRESS_____

GET OUT OF TROUBLE, STAY OUT OF TROUBLE -- WITH VALVOLINE

tomorrow's motor oil may be a product of the petroleum *and* chemical laboratories.

"Thus far we have been able to stay away from specially-treated motor oils for our gasoline engines and have not found it necessary to use any additives, except such things as light penetrating oils which we introduce through the carburetor, about once every two months, when ignition and carburetor 'tune-up' are performed.

"We are willing to grant that a specially-treated motor oil was *needed* for our one Diesel engine. Apparently the additives freed the rings, as before stated. And thus far they seem to have done no harm to bearings, etc. Perhaps it is also true that the modern high-compression *gasoline* engine, operating under severe-duty conditions, would also benefit through the use of specially-treated motor oils? If this is the case, we feel inclined to pick a reliable oil company and let them make the recommendations, rather than to purchase an additive in the open market and perhaps choose the wrong one?

"But before giving up the use of our straight, untreated Pennsylvania oil, which we have used all these years in our gasoline engines, we are going to make sure that someone answers a few questions first. We have heard that these modern, treated oils are quite the thing, but that some oil-filters are so good that they even remove the additives from these oils. The fact is that we have become so thoroughly sold on filters, that we hesitate to discard them in favor of a new oil. Our question is, what shall we do about the filters?

"We have read where the condition of an oil after use is not always a true indication of the condition of the engine. Also that when we drain a crankcase, we shouldn't get excited if the oil is extra dirty, the theory being that by picking up the dirt, the oil is doing its job, keeping it in suspension and preventing it from forming into solid or pasty masses within the engine, effecting removal, of course, when it is drained.

"So there we are, gentlemen. Right back where we started! We *like* filters. We *like* to do business with the big oil companies. We *like* to be economical and *we like to learn!* We have received a liberal education from reading FLEET OWNER during the past five years, especially on the problems of lubrication. If you can furnish the answer to our *present* problem, please let's have it in an early issue. Maybe the answer lies in the use of both—a modern, treated motor oil, especially designed for heavy-duty gasoline-powered fleet operation, *plus* an efficient oil-filter to *help* the oil in its job of keeping the motor clean. Perhaps someone has the right combination of oil and filter that will work well together? We wouldn't want to pay the oil company for blending a special additive into our oil, if we thought the filter would remove it. Gentlemen, we are 'all ears'."

(*Editor's Note:* We believe the answer to this problem lies right around the corner. The right combination of oil and filter seems possible. In fact, upon taking this matter up with oil companies, we find that they have very definite recommendations as to the type of filter to use. With reference to the Diesel oil problem, which seems to have worked itself out o.k. in this fleet, some reassurance from the oil company as to the non-corrosive properties of the oil in question should counteract criticism from competitive salesmen.—H.C.F.)

●

Fog, Driving and Spot-Lites

(*Continued from page* 41)

—45; "Every 2 Weeks"—7. "Every Month"—41; "No answer"—71. . . . To which we might remark that we do not think once-a-month is often enough. Every day would be better, but it can probably be assumed that drivers would report any lights that were not working, or were ready to

fall off, etc., so we will let it go at that.

Source of supply always being of interest, we next asked, *"What is your main source of supply on lighting equipment?"* . . . The automotive jobber seems to be getting most of this business, with the equipment distributor second, the answers being: "Automotive Jobber"—126; "Vehicle Dealer or Factory Branch"—7; "Equipment Distributor"—32; "Lamp Manufacturer"—12; "Retailer"—2; some operators mentioned more than one source of supply.

The fact that fleet men are trademark-minded is reflected in the answers to the next question which asked *"Do you specify the make of lighting equipment wanted when ordering?"* . . . The answers were "Yes"—133; "Sometimes"—19; "No"—15; "No answer"—48.

In the next question, the *make* of auxiliary light preferred was asked, and a total of 21 different makes was given, five of these makes being mentioned as very popular among the fleets surveyed. We are sorry that we cannot list the makes here, but they are contained on our confidential summary which has been sent to the participating fleet men. . . . In addition to the makes mentioned, 7 fleets said that they like *any* kind of fog or driving-light, so long as it contains a sealed-beam unit.

As in all of these surveys, space was left for fleet men to write in their own pet remarks. We reproduce some of the most pertinent ones, selected at random from the questionnaires. Please note the emphasis which has been placed on the need for a better light for driving in fog. Here they are:

"A driving-light, to be effective, must be close to the ground. We believe that most of them are overestimated as fog-lamps."

"We use a roof-mounted spot-light. These could be improved by using heavier swivel-joints and pins."

"My own car is equipped with a fog-light, but I see no advantage in using same."

"There is a definite need for a fog-light that actually works." (Several times)

"We have need for a powerful spot-light for public-utility trouble-shooting work."

"Room for improvement in fog-lamps. Amber lenses do not provide enough light."

"All lights of this kind should be made in standard size, preferably with sealed-beam construction, with a very strong shell."

"Don't like sealed-beam as well as old types, as it will not spot small enough."

"Need a good, strong, water-tight lamp, with strong lens that keeps light down on road and will not crack from small stones. Should mount under bumper."

"Haven't seen a fog-lamp that really works in fog on California highways."

"Have used all makes of fog-lights, but with very little success." (Several times)

"Sealed-beam types seem to be the best lights we have used thus far."

"Auxiliary lights are not sufficiently theft-proof. Construction too light for heavy-duty work. Not standardized enough from replacement viewpoint."

"We are changing from amber to clear lens fog-lights, with sealed-beam bulbs."

"Have not found any light that will penetrate fog. Have obtained some help from amber lens lamps, mounted low, and focused so as to get under the fog."

"Would like to see a sealed-beam spot-light, as our main difficulty is in keeping rims and lenses in place, and bulbs in focus. Rims are made too flimsy."

"Stronger mountings, better wiring, better switches, reflectors, etc. are needed."

"Consider fog-lamps of no real value; probably a hazard for drivers. Believe they help drivers see better but can't drive any faster under foggy conditions. A clear lens lamp,

Another VALVOLINE "First!"

HPO
HIGH POWER OUTPUT

First Successful PENNSYLVANIA Oil For DIESELS and PEAK LOADS in GASOLINE ENGINES

Valvoline H P O meets your needs for an oil that lubricates perfectly at extreme heats, and actually *cleans the engine* as it lubricates.

For the first time, a detergent (cleaning) action has been embodied in a top-quality, 100% Pennsylvania oil of high viscosity.

Valvoline H P O avoids "varnish" — cause of sticking rings and pistons—keeps motor cooler, reduces consumption of oil, stops bearing corrosion — means longer life for your Diesels and peak-loaded gasoline engines.

Fleet operators will find Valvoline H P O the ideal oil for economical, trouble-free performance under the most severe conditions. Get the complete story today!

75th YEAR VALVOLINE DIAMOND JUBILEE 1866 — 1941

VALVOLINE OIL COMPANY
579 E. Fifth St., Cincinnati, Ohio
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Refinery in Pennsylvania

VALVOLINE OIL CO.,
579 E. 5th Street, Cincinnati, Ohio
Send me illustrated laboratory report and test data on Valvoline H P O, first successful Pennsylvania Oil for Diesels and peak loads in gasoline engines.
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SEND THIS COUPON FOR H. P. O. FACTS!

GET OUT OF TROUBLE, STAY OUT OF TROUBLE -- WITH VALVOLINE

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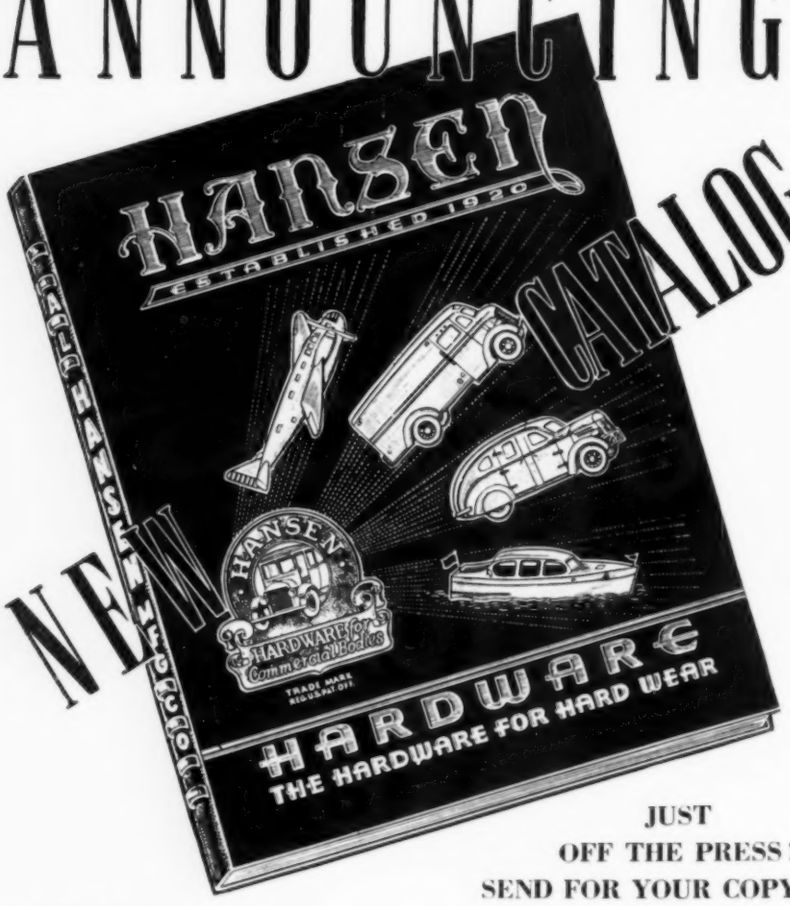

NEW CATALOG

JUST OFF THE PRESS! SEND FOR YOUR COPY

COMPLETELY new from cover to cover, attractively embossed in silver and gold on green background, this latest Hansen Catalog contains many new and outstanding designs in commercial body hardware.

New locks with locking devices—new slamming and slam-and-take-up locks—new rear door, sliding door, cab and extension locks —new handles. A handy, ready reference for body builders, designers, fleet operators. If you have not received it, SEND FOR COPY.

A. L. HANSEN MFG. CO.

5043 RAVENSWOOD AVE.—CHICAGO, ILL.

with reduced candle-power, very low position mounting, might be of some help."

"In our opinion, amber fog-lights are not much good. A white light is much better in fog than amber. Red light is best in fog, but police won't permit them."

"Believe the new sealed-beam is the best thing for a driving-light."

"How about a heating-element in lamp to keep lens warm and prevent ice formation?"

"Amber lens gives back no glare in snow or fog; clear lens do, especially in snow."

"As in all things, the best driving-lamp is the cheapest in the end."

And that, folks, is the story on auxiliary lighting equipment, so far as fleet experiences are concerned. This survey can be considered quite representative, as it includes the experiences of 215 fleet operators, located in 39 states, Hawaii, Alaska and Canada, having an average of 164 vehicles each. These fleets operate 35,362 vehicles in all, as follows: 18,233 trucks; 2,547 tractors; 3,736 trailers; 5,880 passenger-cars; 1,877 buses; 270 taxicabs and 2,810 miscellaneous vehicles.

Maybe it will be in order to give you a list of the industries, whose fleets participated in this survey. This will serve to give you a better idea as to the general coverage of it, and also an idea of the *tough* job it is to word a questionnaire that will be answerable by a fleet operator in *any* line of business. Fleets in these industries participated: Trucking, local and long distance; ice cream; dairy products; bakeries; public utilities; manufacturers; municipalities; petroleum companies; ice and coal dealers; contractors; building material companies; grocers; department stores; meat packers; drive-yourself companies; truck-rental companies; bus operators, brewers; laundries; county departments; state departments; federal departments; food products; bottlers; taxicab companies; lumber companies; newspapers; nurseries; insurance companies; hardware wholesalers, etc.

So you see, this survey is *quite* representative. We would like to see a greater number of fleet operators participate in this monthly feature, in return for which you will get a private and personal copy of the *confidential* tabulation which we make. This contains all such information that we can't give here—such things as tradenames, etc.

This month's questionnaire promises to be unusually interesting. If you feel that you'd like to get the confidential report which it will bring, just turn to page 51, tear out the page, fill in the answers to as many questions as you can (or as you care to) and send it back to us. Rest assured that everything is kept *confidential*, and that your name is *never* mentioned to anyone, or at any time. It's your cooperation that we need to make this thing a success. Thanks.

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Legislative Outlook

(*Continued from page* 42)

integrity of revenue from highway-user taxes have been introduced in 19 states. Legislatures in Iowa, Oregon and West Virginia have adopted resolutions submitting such amendments to vote of the people for ratification. The Wisconsin resolution, which like that in Iowa had previously passed the 1939 Legislature, has passed the lower House, but may not get through the Senate. Anti-diversion constitutional amendments were allowed to die in Arkansas, Georgia, Indiana, Maryland, New Mexico, Washington and Wyoming and are still pending in Connecticut, Delaware, Maine, Massachusetts, Missouri, Nebraska, New Jersey, Pennsylvania, Rhode Island, Texas and Wisconsin. The Nevada Legislature passed a bill designed to legalize certain highway activities construed as prohibited by the anti-diversion constitutional amendments.

A large volume of bills would increase the sharing of local governmental subdivisions in highway funds.

Some of the bills would relax or fail to provide for proper supervision of the expenditure of highway funds by cities and counties. In a few states measures would permit local subdivisions to divert the money to non-highway purposes.

The Indiana Legislature increased by approximately $3,000,000 the allotment of highway funds to cities and counties. Bills increasing local sharing are receiving serious consideration in Illinois, New York, Pennsylvania, Vermont and Wisconsin. Similar bills died in Arizona and Oregon.

Motor Fuel Taxation: Although there have been no increases or reductions enacted to date, "emergency" or additional gasoline taxes have been extended in New York, North Dakota, Ohio and West Virginia, and probably will be continued in Massachusetts and Minnesota (1c expired Sept. 1, 1940). Bills for increased gasoline taxes have been offered in California, Connecticut, Kansas, Maine, Missouri, New Mexico, Oklahoma and South Carolina and reductions proposed in Arizona, Michigan, Oregon, Rhode Island, South Carolina, South Dakota and Texas. Several of the bills in these two classes have already been killed. The extension of motor fuel taxes to Diesel fuel and similar substances either by broadening the definition of "motor fuel" or by the imposition of "use fuel taxes" has been enacted into law in Arkansas, Arizona, North Carolina, South Dakota, Tennessee, Utah and Wyoming, and such bills are pending in Maine, Nebraska, New Mexico and Texas.

Motor Vehicle Taxation: Indiana has repealed the unpopular "tire" weight tax. A new law increasing license fees to replace revenue lost through the repeal of the tire tax has been questioned on the basis of an allegedly defective title. Mileage tax bills have been offered in California, Iowa, Nebraska, New Mexico, Oklahoma, Texas and Wyoming, but, thus far, have either died or failed to receive support. Truck fees have been reduced by new laws in Maine and Tennessee. Bills are pending in California, Iowa, Missouri, Texas (trucks and buses) to greatly increase license fees.

Reciprocity: Oregon has repealed its requirement of non-resident motorist registration. A Wyoming law sets up a Reciprocity Commission to negotiate reciprocal agreements and the Georgia Legislature has broadened the authority to make such agreements.

An Idaho measure to restrict non-resident privileges failed. Indiana, Montana, North Dakota, South Dakota and Utah bills to broaden reciprocity died. Reciprocity bills are still pending in Iowa, Maine, Minnesota, New Hampshire, New York and Wisconsin. Bills in Kansas and Nebraska to repeal Port-of-Entry laws have been defeated.

Arkansas, Minnesota, North Dakota and Wyoming have already enacted legislation extending reciprocal registration privileges to non-resident members of the armed forces temporarily detailed to service in such states, and similar bills are pending in several other states.

Legislative Study Committees: A development of great interest to highway users is the increasing legislative resort to study committees and commissions empowered to recommend legislation based on their findings. A complete study of for-hire motor vehicle legislation has been authorized by the Oregon Legislature. In Indiana, a commission has been set up by legislative action to survey the highway system and means of financing the same.

The Oklahoma House created a special committee to study all the different statutes relating to fees, licenses and special funds. The New York Legislature has sent to the Governor a measure directing study of the distribution of gas tax revenues to localities. Investigation of the use made by counties of state highway funds is provided in a pending Pennsylvania resolution.

The West Virginia Legislature provided for a study of highway safety

Here's a great new truck tire
The PENNSYLVANIA Turnpike
"MY COST FIGURES PROVE THAT YOU DO SAVE MONEY WITH PENNSYLVANIA TRUCK TIRES"
● Truly the truck tire of tomorrow . . . here today! A superb performer under all conditions. Exclusive non-skid Dual Purpose Tread is heat and wear resistant. Extra-tough carcass made 30% stronger through use of Supertest Cord. Both welded together by Super-Pressure Curing to make this great, new Turnpike the envy of the industry.
A test will prove the difference.
PENNSYLVANIA RUBBER COMPANY
General Offices & Factory: Jeannette, Penna.
A heavy ground-gripping non-skid tread—a carcass that eats up miles and a value in dollars and cents that challenges comparison!
DUAL TREAD LICKS THE HEAT!
Special Tread Resists Wear
Patented—U. S. Patent Nos. 2218751 and 2230872
Under Tread Controls Heat

Not a Single Buyer Has Ever Asked For His Money Back

GUARANTEE

Hickman Pneumatic Seat Company wants every user thoroughly satisfied. If seat is not 100% satisfactory ship it back within 10 days to factory and your money will be immediately refunded.

LOW PRICES!

Model A Seat fits any standard cab—$17.85 plus 45c. tax.
Model A-1 is 2" shorter in depth to fit older, less roomy cabs—$18.85 plus tax 48c.
Adjustable attachment only 75c. extra.
Price FOB. Eden, N. Y., subject to change without notice. If there is no distributor in your community mail your order direct to factory. State truck model.
Reference: Bank of Hamburgh, Hamburg, N. Y.

Proving 100% Satisfaction with

HICKMAN *Full Floating* TRUCK SEATS AND 100% MONEY BACK GUARANTEE

Truck owners have ordered and reordered these new Hickman Full-Floating Truck seats. Here are the reasons:—

Comfort—Hickman seats conform with driver's body . . . absorb shocks from minute jiggles to heavy bumps.

Eliminate rubbing and wear on back cushion and clothing . . . short, soft, up and down movement.

Save gas, motor and driving mechanism—by enabling driver to keep his foot steady on the throttle.

HICKMAN PNEUMATIC SEAT CO., INC.
Eden, New York

Install Hickman Seats in Your Present Trucks and Make It a Rule to Specify Them on New Equipment.

Back cushion very soft, sensitive and comfortable.
Back and seat move as a single unit.
Rubber bushed linkage guides and controls seat action. No squeaks, no wear, no lubrication.
Slow motion, air-bound Atkinson spring seat cushion, —like riding on air!
Seat and back float on sensitive coil springs.
PATENTED
Adjustable attachment.
Model A 24" Front to Back
Model A-1 22" Front to Back

and the North Carolina Legislature directed a study of compulsory inspection laws.

A California resolution would create a committee to study highway costs and the equitable distribution of highway-user taxes between various classes of motor vehicles. Measures in Wisconsion for a road program study committee and in Massachusetts for a study of truck transportation are still pending. Proposals to investigate carrier regulatory laws failed in Maryland, Indiana and North Carolina.

Toll Roads and Turnpike Authorities: Creation of Turnpike Authorities to construct toll roads is proposed in a number of states, following the example of Pennsylvania. Bills in Maine, Illinois (Cook County), Missouri, New Jersey, Oklahoma and Wisconsin (applicable only to Milwaukee), would set up independent corporations with power of eminent domain, to finance construction of turnpikes through issuance of bonds, and to amortize the cost from toll collections. Pennsylvania bills would extend the present Turnpike westward to the Ohio state line and authorize a "Rim Parkway" in the Pocono Mountains.

The Maryland Legislature has empowered the State Road Commission to construct toll "motorways" from Washington to Baltimore and from Bel Air to the Pennsylvania state line. A New York measure creating a Westchester Cross County Parkway Commission with turnpike powers has been sent to the Governor. The Governor of Ohio may recommend a Turnpike Authority to construct $100,000,000 superhighway through Northern Ohio.

Carrier Regulation: New carrier acts, designed to secure greater conformity to Federal regulation, were enacted in Arkansas and introduced in Idaho, Oklahoma, Rhode Island and Vermont. The Idaho and Vermont bills died. Three Texas bills seek to exempt private motor truck owners from onerous regulation in that State under the *New Way Lumber Case.*

Itinerant Merchants: Regulation of itinerant merchants using motor vehicles is an important legislative issue in the states west of the Mississippi River. Bills for this purpose have been offered in Arizona, Arkansas, Colorado, Idaho, Illinois, Kansas, Missouri, Nevada, Oklahoma, South Dakota, Texas, Utah and Washington. The Arkansas bill has been enacted into law. The Kansas bill appears likely to pass. The Arizona, Idaho, Nevada, Oklahoma, South Dakota, Utah and Washington bills were killed. Amendments to existing laws have been proposed in California, Iowa, Nebraska, Wisconsin and Wyoming (died). A New York measure would regulate merchant truckmen (i.e. buyers and sellers of farm products).

Transportation of New Automobiles: Transportation of new automobiles for sale by the truckaway and driveaway methods is threatened with stringent and, in some cases, crippling regulation. These proposals are usually offered in the name of safety. Singled out for legislative attack is the "double-deck" method of transportation. This would include not only "car-over-cab" (now prohibited in Pennsylvania and West Virginia), but would prohibit any two-level transportation. Bills to this end are pending in Colorado, Illinois, Iowa, Missouri and Ohio. Similar bills died in Arkansas, Maryland, Nevada, Tennessee, Utah, Vermont and Wyoming. A bill repealing the West Virginia law failed.

Caravaning of motor vehicles would be subject to licensing and further taxation by bills in Colorado, Minnesota ($250 driveaway license—passed House), Missouri and Nebraska. The New Mexico law was amended to strengthen the regulation and the Wyoming law was amended to exempt individual deliveries and increase the fee from $6 to $10 per car. A North Carolina bill prohibiting towing of motor vehicles was defeated. A similar bill is pending in South Carolina.

Week-End Truck Bans: One of the important threats to highway transportation is the proposed prohibition or limitation by law of truck operations on week-ends and holidays. These bills are generally sponsored by competing forms of transport. Bills for this purpose were killed in Arkansas, Indiana, Iowa, Maryland (passed House), Oregon, Tennessee and Vermont, but are still pending in Colorado, New York, Ohio and Texas.

Gasoline Gallonage Restrictions: Closely allied with the week-end truck ban as a method of crippling highway transportation is the proposal to restrict the gallonage of gasoline that may be transported in trucks on the highways. Measures of this type died in Indiana, Maryland, North Carolina, South Dakota, Vermont and Wyoming. Bills are still pending in Colorado, Connecticut, Minnesota, Missouri, New York, Ohio, Pennsylvania, Rhode Island and Texas.

Financial Responsibility: The difficult problem of the uncompensated motor vehicle accident has been a subject of increasing legislative concern. Compulsory insurance bills requiring proof of financial responsibility of all users of the highway have been introduced in California, Connecticut, Illinois, Maine, Maryland, Minnesota, Montana, New York, Ohio, Pennsylvania, Vermont and Wisconsin. Massachusetts is the only state which at present has a compulsory insurance law.

A unique approach to this problem appears in legislation providing for automobile accident compensation. The compensation fund, accumulated either by allocating highway revenues or through the imposition of an additional registration fee, usually is limited to hospitalization expenses (particularly for indigents).

Ohio has had a special law providing hospitalization for indigents. A new Oregon law imposes an additional operator's license fee of 50¢ for this purpose. Legislation of such character was offered in California, Connecticut, Montana, New Hampshire, New Jersey, North Carolina, Pennsylvania and Washington, and has been killed in Montana, North Carolina and Washington.

The New Hampshire Legislature has sent to the Governor a bill amending that State's Financial Responsibility Law to relieve innocent parties of the necessity of filing proof. A New York bill sent to the Governor greatly tightens the financial responsibility law.

Equipment: The trend in equipment bills is to conformity with the I.C.C. Safety Rules and the Uniform Traffic Code. Tennessee has harmonized its equipment requirement laws with the I.C.C. and a new Delaware statute empowers the Motor Vehicle Commissioner to do so.

The Maine Legislature has enacted a statute sanctioning sealed beam headlights. A New Jersey bill would require a headlight beam indicator. Measures relating to headlights are also before the California, Massachusetts and Michigan Legislatures.

The customary flood of "fancy" bills requiring new gadgets was presented in state legislatures but they are receiving little serious consideration.

•

How Ford Tests Trucks

(*Continued from page* 52)

Intermittently the vehicle is sent through sand, a 300-foot water pit and a 200-foot mud trough. The procedure is repeated day after day. A complete "case history" is kept on each test.

The truck, when finally taken from the track, is sent back to the manufacturer's engineering laboratory, where it is torn down and meticulously checked. Findings are analyzed and if flaws are detected, or improvements of any kind are indicated, they are undertaken at once.

Stamina, power and economy are the characteristics designers and engineers strive to achieve in today's trucks. The vehicles must have all three qualities to pass muster at the test track.

There's Only One Way to KNOW
THE POWER AND ECONOMY RANGE OF YOUR TRUCKS—

STEWART-WARNER MOTOR MILE TACHOMETER!

Owners Say
"SAVE UP TO 25% ON FUEL AND OIL EXPENSE!
... and reduce maintenance costs at the same time!"

GASOLINE mileage stepped up 1.7 miles per gallon! 15,000 miles more service between overhauls! Maintenance costs reduced! These are *only a few of the results reported* by fleet owners following the installation of Stewart-Warner Motor Mile Tachometers!

These savings are a direct result of *knowing the power and economy range*—as shown by the two stationary red pointers on the tachometer—and keeping the motor speed within that range! This is easy for the driver to do—it's just a matter of keeping the tachometer pointer between the two red pointers. And the Stewart-Warner Motor Mile Tachometer is the only instrument on the market which provides this vital information at all times!

Furthermore, this amazing instrument records r.p.m. in terms of *motor miles,* whenever motors are turning, making it possible for you to service trucks on a basis of actual *motor miles* instead of *road miles*—which may mean cutting repair bills as much as 25%!

Mail the coupon now for complete information!

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I operate.... Trucks. Please give me all the facts about cutting my operating costs with Stewart-Warner Motor Mile Tachometers.

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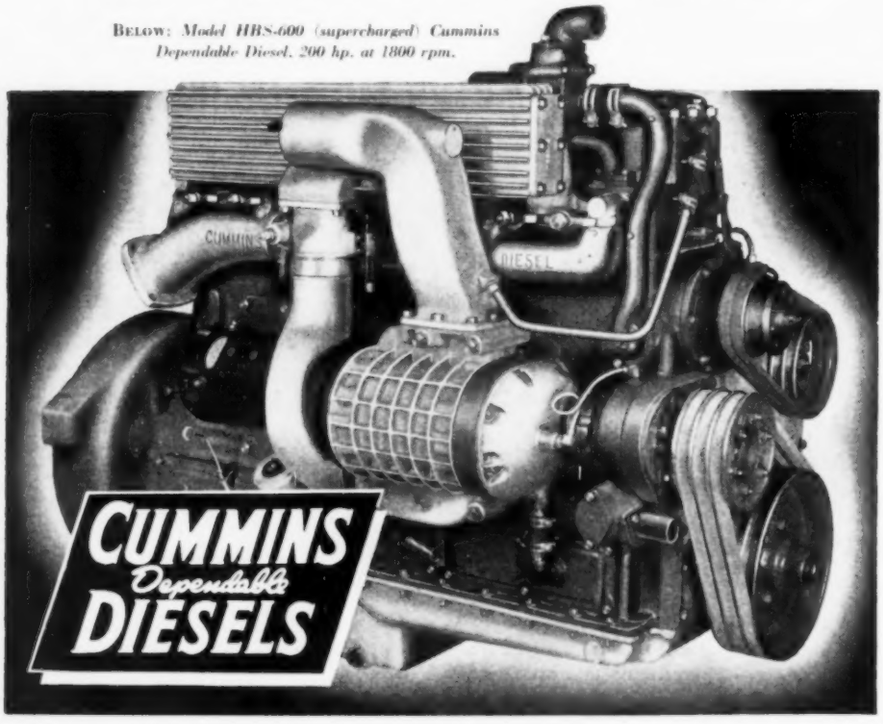
HORSEPOWER TO BACK MANPOWER

From coast to coast, the nation's leading fleet owners are working their Cummins Diesel-powered trucks day and night to keep a steady stream of supplies—food and equipment, materials and tools—rolling toward the centers of National Defense activity. Keeping this vast fleet in tip-top condition is a job of the most vital importance . . . a job to which the nation-wide Cummins distributor-dealer organization pledges 100 per cent cooperation, 24 hours a day. This organization—represented in key cities in every locality—offers expert mechanics, full parts stocks and educational work in preventive maintenance. No matter where you bought your Cummins Diesels . . . no matter where you operate them . . . every Cummins distributor and dealer is at your service. Cummins Engine Company, 1216 Wilson Street, Columbus, Ind.

BELOW: *Model HBS-600 (supercharged) Cummins Dependable Diesel, 200 hp. at 1800 rpm.*



New Flexible Tail-Pipe

THE addition of a new flexible tail-pipe to the Permite automotive replacement parts line, is announced by Aluminum Industries, Inc., Cincinnati, O.

This new flexible tail-pipe is constructed of heavy-wall, interlocked steel tubing. At the time of installation, this flexible tail-pipe is easily shaped by hand to fit the understructure of any vehicle, but after a few days use, it sets almost as rigid as the conventional style pipe.

Another feature of the new flexible tail-pipe is the long 16" nipple at one end. This extra length not only provides for shortening the pipe where desirable without cutting the flexible tubing, but also makes it possible to have an unsupported section at one end where brackets could not be used. To fit all cars and trucks, including older models of popular makes and discontinued makes and models, only 10 sizes are required.

For more information, prices, etc., address Aluminum Industries, Inc., Cincinnati, Ohio, mentioning FLEET OWNER, please.

•

New Oil Literature

TWO new, elaborate books have recently been issued on the subject of engine lubrication. They are:

"Diesel Lubrication"—A well-illustrated, 16-page book, that explains in readily understood terms the lubrication problems of today's high-speed Diesels, with particular emphasis on bearing problems and wear. Contains an analysis of the roles played by various types of oils, and what conditions suggest the use of "heavy-duty" oils.

"Essolube H-D"—A book giving a complete description of the properties of a new high-stability, high viscosity-index, detergent type of motor oil for all heavy-duty gasoline and Diesel engines. Contains an explanation of special laboratory and engine tests which evaluate the performance of compounded oils in the new "heavy-duty" classification. Numerous photographs of engine parts are printed in this 16-page book, including some in full color.

For free copies of either or both of the above books, address Standard Oil Company of New Jersey, Room 1569, 26 Broadway, New York, N. Y. . . . Mention of FLEET OWNER will inform them where you read of their new literature, and will speed up the service.

•

Hardware Catalog Is New

COMPLETELY new from cover to cover is the latest truck body hardware catalog of the A. L. Hansen Manufacturing Co., 5043 Ravenswood Ave., Chicago, Ill.

This new manual on body hardware is replete with many brand new items, such as various locking devices, slam-and-take-up locks, rear-door and sliding-door locks, cab and extension locks, handles, etc.

Many other items in body hardware, such as hinges, seat fixtures, fastening hooks, trim mouldings, etc., help to round out and make complete this new catalog. It is embossed in silver and gold on a green background and is indexed for quick and easy reference.

Fleet operators, body builders, designers and body repair men will appreciate this new catalog, copies of which are free for the asking. . . . Address A. L. Hansen Manufacturing Co., 5043 Ravenswood Ave., Chicago, Ill. . . . Mention of FLEET OWNER always helps.

•

New Dodge Truck Catalog

FULL information on 1941 Dodge Job-Rated trucks, the most complete line Dodge has ever produced, is contained in a 44-page, four-color catalog recently issued.

Representative models of the entire line, from half-ton commercial units to heavy-duty gas and Diesel-powered freighters, are illustrated in full color. Included, in addition to conventional models, are urban panel delivery, 1½ and 2-ton cab-over-engine units. Pictured and described also are the four clutches, three transmissions, eight rear axles, 23 frames, 10 spring combinations and six brake combinations used in the wide range of 112 standard chassis and body models.

Special sections are devoted to the comfort and durability of safety-steel cabs; also to dual-purpose trucks and the two-tone color combinations available this year for the first time as standard on one-half, three-quarter

and one-ton models. Special bodies, extra equipment, and deluxe cabs are also shown and described. Several pages are devoted to specifications and owners' experiences. Truck operators may obtain a copy by writing to the Dodge Truck Advertising Department, Detroit, Michigan. . . . Mention of FLEET OWNER is always appreciated.

●

Truck Campaign Fitted to Market

DODGE Truck Division is currently launching a new advertising and merchandising campaign designed as a two-way approach to the expanding truck market. . . . The theme of the copy is to suggest that prospective buyers look at "all three" leading makes of low-priced trucks. . . . A question-and-answer technique is now being used in Dodge truck publication and poster advertising. . . . Ross Roy, Inc., Detroit, is the agency.

●

White Promotes Cass and Quartullo

WHITE Motor Company announces the promotion of two men on its engineering staff. . . . Robert Cass, formerly executive engineer, is named chief engineer, succeeding Forest S. Baster who has been upped to a vice-presidency in charge of engineering. . . . O. F. Quartullo, who has been special design engineer, is promoted to chief engineer of the White Horse division of the company.

●

Sharp Rise in Mack Export Sales

MACK Trucks, Inc., reports that export sales of Mack trucks during the first two months of 1941 are up 128 per cent. . . . And that during 1940 this branch of their business enjoyed a 52 per cent increase in sales over those of 1939. . . Latin-America and U. S. Possessions account for most of the orders, according to R. D. Hilty, export manager for Mack.

●

Aluminum Industries' New Plant Ready

OPERATIONS in its new $800,000 aluminum and magnesium foundry and aluminum paint plant are scheduled to start on May 1st, according to officials of Aluminum Industries, Inc., Cincinnati, Ohio. . . . This is the first unit to be completed in the company's extensive building program. . . . The new foundry and paint plant has an area of 150,000 sq. ft. and is of modern, fire-proof construction, the foundry having an estimated capacity of 2,225,000 lbs. per month.

●

Morgan Packing Purchases Fruehaufs

A HEAVY purchase of Fruehauf Aerovan-type trailers by the Morgan Packing Company of Austin, Indiana, is announced by Roy A. Fruehauf, vice-president in charge of sales of the Fruehauf Trailer Company. . . . In addition to ninety of these units recently purchased, the same organization added ten during last December and ten in January, or a total of 110 units during the last several months. . . . The trailers are used for the transportation of the Morgan company's packing house products.

New Laminated Shim Appointments

NEW appointments of executives are announced by Laminated Shim Company, Incorporated, Glenbrook, Conn., following the recent meeting of its board of directors. . . . E. B. Nisbet, formerly purchasing agent and treasurer, becomes executive vice-president of the Company. . . . E. R. Young, the former factory manager, steps into an enlarged portfolio as the new vice-president in charge of production. . . . Richard Seipt, as the newly-appointed vice-president in charge of sales, takes on responsibilities in addition to those held during his term as sales manager.

American Chain Promotes Greenwood

PROMOTION of Roy E. Greenwood to the post of assistant Pacific Coast manager of American Chain & Cable Company, Inc., is announced. . . . Mr. Greenwood's headquarters are at 630 Third St., San Francisco, Calif. He will operate under E. O. Johnstone, who has been Pacific Coast manager for many years. . . . Mr. Greenwood has been with American Chain for more than 10 years, and leaves the Chicago territory, where he held the position of district sales manager. . . . E. J. Flood succeeds Mr. Greenwood at Chicago, with offices at 400 West Madison St.

LINK-BELT ROLLER BEARINGS
Provide Long Lasting Smoothness!

The exclusive convex-concave roller principle of Link-Belt Shafer Roller Bearings offers truck and bus operators many performance extras that are not found in ordinary bearings. They run smoother and last longer because the basic design of these bearings provides compensation for wear. Ask your jobber to explain this—you'll discover something that will help you put many more miles of top performance into every bus or truck in which you replace front wheel, differential or rear axle bearings. If your jobber doesn't carry Link-Belt Shafer Roller Bearings—write us for the name of one near you who does!

LINK-BELT COMPANY
519 N. Holmes Ave., Indianapolis, Indiana
Warehouses in all principal trading centers
Made by the makers of the famous Silverstreak Silent Timing Chain!

8507A

FOR FRONT WHEELS DIFFERENTIALS AND REAR AXLES

LINK-BELT SHAFER ROLLER BEARINGS

EBERHARD "does its bit" as HEIL AIDS THE AIR CORPS

When Heil built these airplane refueling trailers they found Eberhard lock equipment capable of meeting the severe Government specifications.

Security, smooth, dependable operation and exceptional durability to withstand hard, snappy service were demanded.

For rear doors and compartment doors they selected a modified form of the No. 565693 "Slamtite" Lock with No. 5630 Recessed Folding Handles.

Upon closing the door the tapered lock bolt pulls it tight, preventing noise and vibration.

Security is provided by a Push Bolt Cylinder Lock. Simply push the plunger and the bolt enters a hole in a special plate welded to the flat rod. Turn the key and the bolt springs out of the hole.

When locked, the T handle is folded into the recessed plate and held in position by a spring. Compactness thus gained permits building the body to extreme legal limits. There are no projections to catch.

Consult the Eberhard Catalog for all your truck hardware needs.

NO. 5630 *Recessed* FOLDING HANDLE

NO. 565693 "*Slamtite*" LOCK

EBERHARD MANUFACTURING CO.

DIVISION OF THE EASTERN MALLEABLE IRON CO.

CLEVELAND, OHIO

Completes Its First Army Contract

DIAMOND-T Motor Car Company of Chicago has completed the first of several contract orders for the United States Army. . . . Delivery was completed last month of the last of 998 six-wheel-drive, 4-ton trucks with cargo bodies to the Quartermaster Department. . . . Another contract for 2,031 of these units is now in production.

•

G. E. Orders Increase 164 Per Cent

ORDERS received by General Electric Company during the first quarter of 1941 amounted to $257,382,000, compared with $97,490,000 during the corresponding period a year earlier, an increase of 164 per cent, President Charles E. Wilson announced recently. . . . This was an all-time record amount of new business for a three months' period. . . . During the first three months this year orders definitely known to cover equipment for national defense purposes amounted to approximately $112,000,000, and exclusive of such business, the orders for regular commercial products amounted to $145,382,000, or 68 per cent more than for the first quarter of 1940 on a comparable basis.

U. P. S. Buys 100 New Dodges

UNITED Parcel Service, which operates in sixteen key cities of the United States from coast to coast, has recently added 100 Dodge delivery units to its huge fleet. . . . The vehicles are of one-ton capacity, have a wheelbase of 112 inches, and incorporate special bodies of advanced design, with bodies and chassis built as integral units. . . . United Parcel Service handles delivery requirements for large department stores and specialty shops in New York, Brooklyn, Chicago, Philadelphia, Milwaukee, Cincinnati, Newark, Paterson, Seattle, Portland, Los Angeles, San Francisco, Oakland, San Diego, Long Beach and Pasadena.

•

Ethyl Makes Changes in Sales Staff

THREE changes in sales department personnel are announced by the Ethyl Gasoline Corporation. . . . Joseph A. Costello, Atlanta division manager since 1937, has been appointed manager of the corporation's New York division, succeeding Richard C. Murphy, who was recently named western regional manager. . . . Alan C. Tully, formerly assistant manager of the Dayton division, will replace Mr. Costello as Atlanta division manager. . . . Sidney T. Pruitt has been appointed assistant manager at Dayton.

•

Another "Post-Office on Wheels"

THE U. S. Post Office Department has recently placed into service another post-office on wheels, similar to the one illustrated and described on page 46 of our March issue. . . . This latest addition is mounted on the Mack CM transit-type bus chassis, a model which is used extensively in passenger service, carrying 40 to 44 passengers. . . . The interior of the new post-office coach is fitted out in a manner similar to the original one shown in our March issue. It operates between Indianapolis and South Bend, about 150 miles and return.

•

New Turner Brass Sales Manager

TURNER Brass Works, Sycamore, Ill., announces the appointment of John W. Mock as sales manager of their liquid fuel appliance division. . . . Mr. Mock joined Turner early in 1940, having had wide experience in sales and merchandising. As sales manager, he will have charge of the 70th Anniversary program which commemorates the company's founding in 1871.

•

Timken Defense Expenditures Increase

THE TIMKEN Roller Bearing Company's initial $3,000,000 defense expansion program, begun in 1940, has been expanded in recent months until it now has reached the four-million-dollar mark. . . . Approximately one-fourth of this amount has gone into new building construction and three-fourths of it into new manufacturing machinery and equipment. . . . Annual projected expenditures will bring the Timken total to $5,000,000 by mid-1941.

Hubbs Now Sales Manager of Monmouth

MONMOUTH Products Company, Cleveland, Ohio, announces the appointment of H. D. Hubbs as sales manager. . . . Prior to joining Monmouth, Mr. Hubbs had been associated with Cleveland Tractor Company and with United Refining Company of Warren, Pa. . . . The Monmouth line includes engine bearings, clutch plates and parts, king-bolt sets, etc., and is distributed through the National Automotive Parts Association. . . . Our best to you, Mr. Hubbs!

●

Wayne Pump Promotes B. H. Sasnett

PROMOTION of B. H. Sasnett to the post of district manager in the Atlanta territory is announced by The Wayne Pump Company, Ft. Wayne, Ind. . . . Mr. Sasnett, who has been with Wayne for a number of years, succeeds A. A. Grossman, who died last February. He brings a fine background and excellent training to his new position, and is widely known in the industry in the Southeast.

●

Chevrolet Expands Parts Facilities

MOVEMENT of parts from factory to dealers, and from dealers to customers, will be materially speeded-up as a result of the construction of a new floor in the Chevrolet national parts distribution building at Flint, Mich., according to Charles E. Wetherald, manufacturing manager. . . . The new addition will make available a total space of 240,000 sq. ft.—an increase of 60,000 sq. ft. over the present total of 180,000 sq. ft. . . . Although Chevrolet has four other major inventory control depots throughout the country, and a total of 52 warehouses, the Flint plant is the principal shipping point.

●

Hayes Adds Fifty Trailers to Fleet

HAYES Freight Lines, Inc., Mattoon, Illinois, has added fifty Fruehauf Aerovan trailers to its fleet, reports Roy A. Fruehauf, vice-president, Fruehauf Trailer Company, Detroit. . . . The new trailers are 24 feet in length and are particularly designed to provide a high ratio of payload to gross vehicle weight. . . . The Hayes Freight Lines, which now operates several hundred trailer units in their over-the-highway operations, started with a single wagon team in 1884. Today the service extends for approximately 12,000 miles throughout the middle west and includes the operations of the former Bell Lines, which have been acquired by Hayes.

●

Howard Ashley Pedrick Dies

WELL-known as the inventor of the process of imparting tension to piston rings by heat, Howard Ashley Pedrick died recently at the age of 78. . . . Mr. Pedrick's invention was patented and is known today as the "heat-shaping" process, one of the features of the rings bearing Mr. Pedrick's name. . . . Nearly 50 other patents were granted to Mr. Pedrick during his productive years. . . . D. W. Pedrick, grandson of Howard A., is a member of the Pedrick engineering staff at Wilkening Manufacturing Company in Philadelphia.

Gulick Promoted at Goodrich

WM. C. GULICK has been appointed manufacturers' sales representative of The B. F. Goodrich Company in its Detroit office, it was announced recently. . . . Mr. Gulick, born in Worcester, Mass., is a graduate of Colgate University with a B.S. degree. He joined the Goodrich company in 1926 as a salesman in the Boston district. Two years later he was assigned to the foreign sales department and represented the company in Hawaii and the Philippines for 10 years before he was transferred to Sweden as sales manager for the company there, before the war intervened. . . . Returning to the United States he became retail supervisor in the Boston district, a position he held until his present appointment.

●

New Service Station Equipment Book

A NEW, simplified and illustrated catalog, covering oil-measures, funnels, buckets, drain-pans, creepers, as well as service station equipment for gasoline, tire and battery stations, has been issued by F. H. Lawson Company, Cincinnati, Ohio. . . . For free copies write directly to the company, and mention this announcement in FLEET OWNER, if you please.

HAUL BIGGER LOADS

GET MORE TRACTION

SAVE ON EVERY TON-MILE

For real pulling power TWO driving axles under the load are far better than one.

With the THORNTON four-rear-wheel DRIVE, in addition to increased capacity and traction you get more flexible operation since you have two transmission ratios—one for power and one for speed. Your investment in equipment is 25 to 40% less, your operating and upkeep costs are from 30 to 50% lower. With THORNTON "Walking-Beam" spring design less shock reaches vehicle and load.

We can show you how to save with a truck equipped with THORNTON four-rear-wheel DRIVE. Users in scores of industries are lowering costs.

THORNTON TANDEM COMPANY

8701-8779 GRINNELL AVE.
DETROIT, MICH.

"When you need TRACTION you need THORNTON"

DO-RAY ALL RUBBER 3-JEWEL LAMP

Can be used for clearance, marker or parking. Waterproof, dustproof, vibrationproof. Lenses are interchangeable thereby making it possible for the lamp to be mounted on either side of the vehicle with the amber lens in front and the red lens on the rear where it should be according to the law.

Lamp only. Can be used as a fender lamp. Equipped with 63 S.C. bulb.
1106-3 ..... 3 Jewels
List Price **80c**
1106-2 ..... 2 Jewels
List Price **75c**

This lamp is furnished with a heavy metal angle bracket. Cadmium plated. Equipped with No. 63 S. C. bulb.
1106-B3 ..... 3 Jewels
List Price **85c**
1106-B2 ..... 2 Jewels
List Price **80c**

The rubber lamp is protected by a heavy cadmium plated metal guard. Equipped with No. 63 S. C. bulb.
1106-G3 ..... 3 Jewels
List Price **90c**
1106-G2 ..... 2 Jewels
List Price **85c**

FLEX-FIT ALL RUBBER 3-WAY TRUCK AND BUS LIGHT

Flexible . . . fits all curved and flat surfaces. All contact strips and body vulcanized into one inseparable unit. Waterproof. Shockproof.
1132-P
List Price **$2.50**

Sturdi-Bilt Mirrors

Can be extended 29 inches from body. Heavy rubber bumper guard absorbs shocks and reduces possible damage to mirror. Complete with clearance lamp and hinge mounting adjustable to any position. Silver luster finish.
1330
List Price **$3.25**

Nobby Reflex Signal

For trucks, busses and trailers. Lens molded in one piece, cannot come loose or get out of focus. Heavy metal frame. Withstands severe abuse.
1292
List Price **$1.00**

CERTIFIED DO-RAY PRODUCT Tested by RECOGNIZED TESTING LABORATORIES. PASSING SPECIFICATIONS OF S.A.E. AND I.E.S. MEETING REQUIREMENTS OF I.C.C. SAFER LIGHT SAFER SIGHT

DO-RAY LAMP COMPANY
1458 S. MICHIGAN AVE. · CHICAGO
SAFETY LIGHTING AND REFLECTING EQUIPMENT

Six Master
THE PERFECT CHEMICAL TUNE-UP

We guarantee that it will do just what is claimed below the sludge test picture on the right.

Easy Application
of sensational
Six Master

Pour in crank-case, no tie-ups, teardowns and carbon jobs. KEEP YOUR TRUCKS IN SERVICE.

This picture (30 seconds after application) shows how SIX MASTER dissolves carbon-sludge, gum and "varnish" as never before.

Directions. Just pour SIX MASTER into the crank-case and forget it. Add 5% SIX MASTER, or approximately 2 ozs. of SIX MASTER for every quart of crank-case capacity. If not in stock at your jobber, send in with coupon below M. O. or check for $3.95 net dealers cost 1 gal. can SIX MASTER.

Mr. Fleet Owner

March Fleet Owner showed your interest in sludge problems. Here is the easiest and cheapest answer to that — SIX MASTER. List 5.50—10 lbs., 1 gal. size. List 25.00—45 lbs., 5 gal. size.

RUST MASTER CHEMICAL CORP.
712 Beacon St., Boston, Mass.

Send me 1 gal. can of Six Master—enclosed is check for $3.95.

Name .....
Address .....
City ..... State .....

"Ethyl" Discoverer Gets Priestly Medal

THE PRIESTLY Medal, highest honor bestowed by the American Chemical Society, was awarded at the Society's 101st meeting in St. Louis, Mo., to Dr. Thomas Midgley, Jr., of Worthington, Ohio, for outstanding achievement in chemical science.

Dr. Midgley, who is vice-president of the Ethyl Gasoline Corporation, New York City, and chairman of the board of directors of the American Chemical Society, discovered tetra-ethyl lead as an anti-knock agent for gasoline and is known for his work on refrigerants used in air-conditioning. He is fifty-one years old and a graduate of Cornell University. He holds the Nichols Medal of the Society's New York Section, and the Perkin Medal of the Society of Chemical Industry. The honorary degree of doctor of science was conferred upon him by Wooster College.

Following the Detroit meeting of the American Chemical Society in September, 1940, Dr. Midgley was stricken with infantile paralysis from which he is said to be recovering. Despite his disability he participated in the recent St. Louis sessions of the Society and is actively directing research.

Previous recipients of the Priestly medal, named for the discoverer of oxygen and given every three years, included: the late Dr. Ira Remsen, president of the Johns Hopkins University; the late Dr. Edgar F. Smith of the University of Pennsylvania; the late Dr. Francis P. Garvan, president of the Chemical Foundation of New York; Dr. Charles L. Parsons of Washington, D. C., Secretary of the American Chemical Society; Professor William A. Noyes of the University of Illinois; Professor Marston T. Bogert of Columbia University.

●

Planning Can Remove Night Driving Risks

POINTING to long-range planning as the solution to the increasing number of traffic fatalities that occur after dark, the National Safety Council of Chicago lists 16 recommendations for reducing deaths on the highway.

Among the proposals of the Safety Council in its recently released booklet, "*The Prevention of Night Traffic Accidents*," is the suggestion that, wherever proper street lighting might eliminate certain types of night accidents, such improvements should be considered. "When a condition of this kind can be anticipated," says the Council, "the lighting should be studied to see if it is adequate."

Spot maps are one of the suggestions for revealing the danger spots, whether the locality being studied is in a rural or an urban area. In addition to the preparation of these maps, the Council urges the inclusion in such a survey of the following facts about night traffic accidents: 1. Time of occurrence. 2. Lighting conditions. 3. Day of the Week. 4. Driver violations involved. 5. Type of accident. 6. Residence of the driver. 7. Type and age of the motor vehicle. 8. Condition of the motor vehicle. 9. Character of the roadway.

Current campaigns throughout the country include the use of traffic surveys of this type. By checking over from police records, it has been possible to learn exactly which street crossings and stretches of road have been responsible for the greatest toll in life and limb. Remedial measures have been taken in many instances, and the accident rate has dropped sharply as a consequence.

Changes in Dodge Truck Field Force

SEVERAL changes in the Dodge truck field sales personnel are announced. . . . S. E. Muthart, formerly district manager of the Harrisburg territory has been promoted to regional truck manager of the Philadelphia region, which includes southeastern Pennsylvania, Delaware and Maryland. . . . T. P. Hinckel, formerly district truck manager, has been promoted to regional truck manager of the St. Louis region, which includes Mississippi, Louisiana and sections of Illinois, Missouri, Arkansas and Tennessee. . . . J. R. Shoupe, Jr., has been appointed district truck manager of the Dallas region, which includes Texas and southern New Mexico.

•

Ford Offers Heavy-Duty Cooling Equipment

HEAVY-DUTY cooling system equipment is now available for all 134", 158" and 194" wheelbase Ford trucks, intended for units operated in unusually severe service, or abnormally hot climates. . . . It consists of a larger radiator, special shroud and 6-blade fan. . . . When specified, this will be installed through production at a charge of $14.00.

•

Ed. Kramer Succeeds His Father

KRAMER Brothers Freight Lines, Inc., Detroit, Mich., announces the appointment of Edward S. Kramer as president of the company, succeeding his father, the late Steve S. Kramer. . . . Mr. Kramer brings to his new post a background of practical experience covering seven years' association with the Kramer organization, which is a leading inter-state motor freight carrier operating between Ohio, Michigan and the eastern states.

•

Keeshin Adds 120 Stainless Trailers

KEESHIN Motor Express, Inc., of Chicago is adding 120 new stainless-steel Fruehauf trailers, 80 of which have already been delivered, reports Roy A. Fruehauf, vice-president, Fruehauf Trailer Company, Detroit. . . . The new trailers are 26 feet in length and include a number of refrigerated vans. . . . The Keeshin system operates in fifteen states covering the area from Des Moines, Iowa to the Atlantic coast. The routes traverse over 17,000 miles of highway and include seventy-two terminal points.

•

Texas O.K.'s Goodrich Hose

THE Gas Utilities Division of the Texas Railroad Commission, which handles matters relating to the petroleum industry in that state, has given official approval to Goodrich's high-pressure butane-propane hose, it is announced at Akron offices of Goodrich. . . . The hose developed to meet this requirement is of combination construction, with synthetic rubber tube and rubber cover, in sizes from ⅜ to 3 inches, with built-in static wire. . . . General specifications call for high resistance to petroleum products' solvent action, and a relatively high strength to resist vapor pressures at varying temperatures.

Large Motor Coach Order for Reo

APPROVAL of specifications for $52,000 worth of Reo coaches, the first eight units of a large equipment order, has been received from William Reznick, president of the Central West Motor Stages of Chicago, by Reo Motors, Inc., Lansing, Mich. . . . Included in this order are a number of special deluxe coaches which will have new type luxurious recliner seats, handsome two-tone upholstery and many special interior appointments. Coaches are painted the standard blue and white color combination of the Central West Motor Stages. . . . The new coaches will be used in charter operation. From 2,500,000 to 3,000,000 miles yearly are operated by Central West in this type of service, and this mileage will be substantially increased with the addition of the new equipment.

•

Don Spicer Joins World Bestos

WORLD Bestos Corporation, Paterson, N. J., makers of Grafild brake lining, announces the appointment of Donald H. Spicer as general manager. . . . Mr. Spicer has had long and favorable experience in the brake lining industry, having been actively engaged in research, production, sales and management in previous connections. . . . Our best to you, Mr. Spicer!

COMBAT ABNORMAL HEAT in Truck and Bus Tires

DILL

Heat-Resisting

VALVE CAPS AND INSIDES

No. 100-BB VALVE INSIDE

No. 664 VALVE CAP

No. 8405 SOCKET WRENCH TOOL for Hard-to-reach Inner Dual Tires

Extra **PROTECTION ASSURES LONGER AIRTIGHT SECURITY — MORE TIRE MILEAGE — FEWER DELAYS**

To combat the abnormal heat conditions encountered in truck and bus operation, Dill provides Valve Insides and Valve Caps with special heat-resisting seals. Fleet owner records show important money-saving advantages through the use of these special valve parts. Air pressure is maintained longer, definitely increasing tire mileage and reducing service expense. Fewer delays are experienced and the need for replacement of valve parts is greatly reduced.

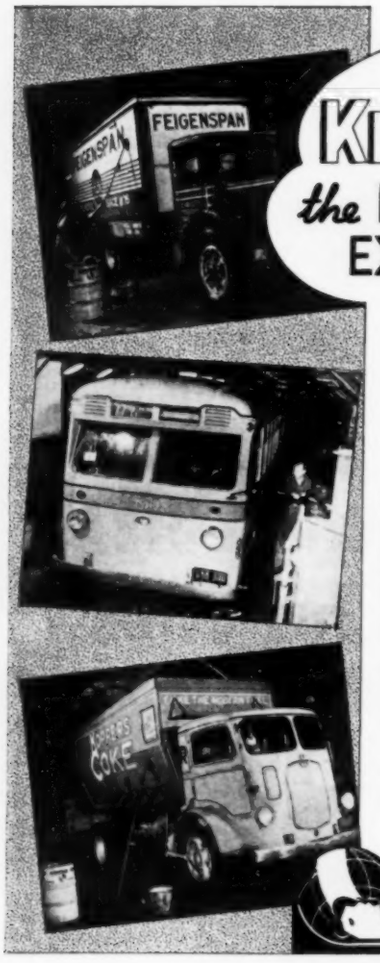
For easy application and removal of the Valve Cap from inner duals, use the handy Dill Socket Wrench Tool which fits the grooves on the Cap and holds it securely while applying to the valve stem.

Ask your jobber or tire supplier for this improved tire valve equipment. It will save time and money for you.

THE DILL MANUFACTURING COMPANY

700 EAST 82ND ST., CLEVELAND, OHIO

LOS ANGELES • AKRON • DETROIT • TORONTO



KEEP 'EM CLEAN
the EASIEST and LEAST EXPENSIVE way!

Sure—you can clean up your truck bodies in perfect shape with any good soap, plus plenty of "Elbow-grease" and lots of time. You can do it with plain water. But the paint job takes it on the chin—and there's little lustre on the finished surface.

Clean 'em the easiest way, which also happens to be the quickest and cheapest as well as the best. Use

MAGNUS NXL

All you have to do is sponge or spray it on—let it soak it a few minutes and then rinse off with fresh water. All the road dirt and film comes away as the rinse water "sheets" off with nary a trace of streaking. The job is quick. But wait till you see the lustre you get on your paint jobs! Many a user has told us that he credits NXL with saving him the money he'd have otherwise spent on a repaint job. And remember that NXL is completely harmless to painted surfaces. Of course if you've let your cleaning go too long, or your methods have been ineffective, you may have to use Magnus 55-P for the first cleaning or two to get rid of the stubborn oil and grease. And the job 55-P does will surprise you too.

When they're once good and clean, NXL will cut your cleaning bill to the bone and set new standards for your "rolling ads".

GOT YOUR COPY YET?

The Magnus Truck Cleaning Handbook belongs in the hands of every fleet maintenance man, because of the money saving ideas it contains.

MAGNUS CHEMICAL COMPANY

Manufacturers of Cleaning Materials, Industrial Soaps, Metallic Soaps, Sulfonated Oils, Emulsifying Agents and Metal Working Lubricants

36 South Avenue Garwood, N. J.

Magnus CLEANERS

D. C. Gaskin New Studebaker v.p.

STUDEBAKER announces the appointment of D. C. Gaskin as vice-president and general manager of the Studebaker Corporation of Canada, Ltd. . . . Mr. Gaskin's promotion to the leadership of Studebaker operations in Canada follows the transfer of M. S. Brooks to an executive position with the Studebaker organization in South Bend, Ind. . . . He has been with Studebaker of Canada since 1931, as assistant sales manager, manager of truck sales and sales manager, respectively.

•

Chevrolet to Train Army Men

ABOUT 1,000 commissioned U. S. Army officers will be trained by Chevrolet in the repair and maintenance of the new "4 x 4" army trucks which Chevrolet has been building for the Army since last fall. . . . Fifteen officers were enrolled in the initial school which started in April, and enrollment will be doubled, so that eventually nearly 1,000 officers will have been trained. . . . These men, in turn, will instruct non-commissioned officers in their respective camps, and they will be in charge of mechanic instruction among enlisted men and draftees.

•

Two New Dodge Truck Managers

APPOINTMENT of two new district truck managers is announced by Dodge Brothers Truck Division. . . . W. H. Johnson, who has for several years been active in the automotive and tire business, now becomes Dodge district truck manager of the Mansfield and Akron territory in Ohio. . . . F. L. Anderson has been appointed district truck manager in the Greensboro, North Carolina, region. His headquarters will be in Greensboro.

New Paper Describes Synthetic Rubber

A PAPER entitled *"Rubbers, Natural and Synthetic"*, given by J. W. Schade, director of research of The B. F. Goodrich Company before the annual meeting of the Institute of Aeronautical Sciences recently, has been reproduced in mimeographed form and is now available upon request to the Public Relations Department of the company in Akron, Ohio. . . . The paper presents a comprehensive discussion of the entire field of natural and synthetic rubbers, their properties and applications. Copies will be furnished to interested fleet operators without charge.

•

Standards Bureau Discusses Motor Oils

THE characteristics of automobile engine lubricating oils are discussed in Letter Circular 613 published by the National Bureau of Standards, Washington, D. C. . . . Subjects covered in the mimeographed pamphlet are selection of oils, carbon residue and oxidation, SAE viscosities, pour-point and flash-point, color, specific gravity, contamination in use, changing crankcase oil, oil consumption, and oil characteristics.

•

Dodge Field Men Get New Posts

SEVERAL new appointments in the field organization of Dodge Division of Chrysler Corporation are announced. . . . C. H. Kenney, formerly district manager in the Rochester (N. Y.) district has been made special representative for the Pittsburgh region. He is replaced in Rochester by N. E. Gage. . . . H. E. Schutte, until recently Baltimore district manager, has been appointed special representative in the Philadelphia region; the Baltimore post is now assigned to C. J. Webster. . . . Other new assignments include R. D. McGiffert as Philadelphia district manager; E. W. Blackwood as Harrisburg district manager, and E. M. Braden as Altoona district manager in the Philadelphia region.

•

Comfort Cushion Expands Facilities

TO MEET the demands of its expanding business, Comfort Cushion Company of Detroit has moved to larger and more modern quarters at 5084 Loraine, according to Adolph Lichter, president of the company. . . . Floor space in the new location totals 26,000 sq. ft. and complete machinery has been installed for the manufacture of truck seat cushions; also rubber cushions and mattresses for other purposes as well.

PLYMETL
Steel-faced Plywood Panels
✓ Tremendous Strength
✓ Extreme Light Weight
✓ Easy to Fabricate
✓ Eliminate Drumming
✓ Reduce Framing

CHECK THE ROAD-PROVED ADVANTAGES OF
★ HASKELITE ★
FOR BODY, ROOF, DOOR, PANEL AND FLOOR CONSTRUCTION
HASKELITE MANUFACTURING CORPORATION, 208 W. Washington St., Chicago

PHENALOID
Hardwood Plywood Panels
✓ Provide One-Piece Dust-proof Floor
✓ Cut Building Cost
✓ Moisture-resistant
✓ Strong and Rigid
✓ Reduce Dead Weight

TAPERED ROLLER BEARINGS

Tyson

ROLLER BEARING CORP.

MASSILLON, OHIO

New Kingham Light Weight

• ZEPHYR •

America's Greatest Trailer Value!

Send for FREE Descriptive Folder

KINGHAM TRAILER CO.

INCORPORATED

LOUISVILLE • KENTUCKY

FLEET OPERATORS:

GET YOUR COPY

This 72-page book, free to fleet owners, gives National Safety Council's new Standard Brake Servicing Schedule, 61 diagrammatic pages of Grey-Rock Engineering Methods for all brakes, and full relining materials and methods. Ask your jobber for a copy.

Grey-Rock

UNITED STATES ASBESTOS DIVISION

of Raybestos-Manhattan, Inc., *Manheim, Pa.*

KEEP YOUR VEHICLES MOVING ECONOMICALLY

with

HALL VALVE SERVICING EQUIPMENT

Ask Your Jobber or write

THE HALL MFG. CO.

TOLEDO, OHIO

MAIL COUPON FOR Free MONEY SAVING CATALOG...

WAYNE AIR COMPRESSORS

NAME .....

ADDRESS .....

CITY..... STATE.....

The Wayne Pump Co., Ft. Wayne, Ind.

A Safety Plan That Worked

(*Continued from page* 54)

The driving clinic revealed that a number of the men needed glasses, that some had a sub-normal reaction to glaring headlights, and that the physical condition of others could be improved by dental work or tonsil operations. Several drivers were found to have a "lazy" eye which refused to work as long as the other eye was open. One man had a glass eye.

The driving clinic not only uncovered physical defects, but also proved to the drivers themselves the need for more alertness. Training at the Supplee plants corrected many of the faults discovered by the police clinic. Cooperation with the Motor Police thus proved to be an important part of this safety campaign, and such clinics, wherever available, should be considered a definite part of every fleet safety campaign.

•

Thomas Now Studebaker Regional Mgr.

ACCORDING to word received from C. S. Fletcher, sales manager of The Studebaker Corporation, F. A. Thomas, until recently on special assignments at the home office, has been elevated to the post of manager of Studebaker's Cleveland regional office. . . . Mr. Thomas' automobile experience dates back to 1915 when he became a retail salesman. He served Ford and Willys-Overland before joining the Studebaker organization in 1931 in the capacity of district sales manager. He takes over his new duties immediately.

•

Reo Gets Big Keeshin Order

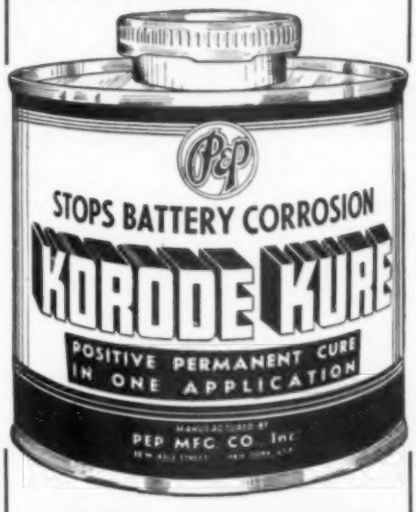
KEESHIN Motor Express, Inc., Chicago, Ill., has placed an order for $50,000 worth of Reo equipment for tractor-trailer operation, according to Reo Motors, Inc., Lansing, Mich. . . . Included in this order are several specially-engineered Reo tractors of 120" wheelbase with 288 cubic-inch engine and 5-speed transmission, particularly designed for long hauls and sustained high-speed operation. These vehicles are painted the special Keeshin blue and aluminum colors. . . . With more than 1,900 over-the-road units, the Keeshin operation extends throughout the states of Illinois, Indiana, Ohio, New York, Michigan, Iowa, Wisconsin, and Minnesota.

•

Celebrates 125th Anniversary

THE F. H. LAWSON Company, Cincinnati, Ohio, makers of oil-measures, funnels, filler-buckets, drain-pans, creepers and other service station equipment, is currently celebrating its century-and-a-quarter anniversary. . . . Franklin H. Lawson, representing the fifth generation of Lawsons, discloses many interesting facts about the company's early history, which started in a crude log-cabin, and opened shop as a "Tin-Plate Worker, Brazier and Iron-Monger". . . . Our best to you, Mr. Lawson!

CORROSION CONQUERED



SEND COUPON FOR FREE SAMPLE

One quick, easy, cheap application removes old corrosion and prevents more from forming FOR THE LIFE OF THE BATTERY.

•

KORODE KURE users never need replace BATTERY CABLES.

•

Painted on, it protects battery boxes, hold-downs and screw threads.

•

Standard for over three years with many large fleets.

•

Buy from your jobber or write us.

PEP MFG. CO., INC.
33 W. 42nd St., New York.

Please send free sample to

Mr.....

c/o.....

.....

What CAUSES TRUCK DELAYS?

Waiting for loads. Not your driver's fault. Often unknown to you. Can usually be corrected easily when known.

Delays in Traffic. Sometimes waiting for freights on streets crossed by railroads. Sometimes waiting for semaphores on traffic streets. Can usually be overcome by re-routing.

Wasted time. Driver's fault. Having coffee. Chatting with friends. Occurs in many ways, and mounts to many hours per month. Can be stopped when known.

This chart tells the true facts. Driver must explain all excessive stops that show up.

RECORD MASTER

is installed in the cab of each truck, and rides the truck each minute of the working day. Automatically records on a special chart every movement and stop of the truck. You can remove chart daily or weekly and analyze it thoroughly and then expect satisfactory explanation from the driver. Thus, wasted time, idle time, unavoidable delays, speeding, etc., show up on the chart and can be corrected. Many RECORD MASTER users report savings in operating costs that actually amount to as much as $400 per year per truck. Now, that sort of saving is important, so you owe it to yourself to

ASK US

for our illustrated folder that gives complete details and prices, and tells you of the many advantages RECORD MASTERS offer. Write us TODAY!

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THORPE BUILDING MINNEAPOLIS, MINN.

INCREASED EFFICIENCY

★ *Longer Lasting*
★ *Finish Protecting*
★ *Lower Cost*

BEAURLINE FOUNTAIN BRUSHES

BEAURLINE Fountain Brushes wash trucks, busses, and cars faster and easier! That saves you time and money! Made with an all-aluminum head and a special rubber bumper to prevent damage to the finish. Patented design allows replacement of all parts quickly and inexpensively.

Write NOW for FREE Literature!

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220 Sixth St., N. W. Cedar Rapids, Ia.

Highway Users Gain in Legislative Action

HIGHWAY users during the first three months of 1941 point to substantial gains in legislative action throughout the country. In 1941 forty-three state legislative bodies met and by the end of the first quarter, 18 regular sessions and one special session had convened and adjourned. Trends of legislation considered indicate state lawmakers have a growing understanding and appreciation of highway problems.

In 19 states constitutional amendments have been proposed to protect the integrity of revenue from highway user taxes. Iowa, Oregon, and West Virginia will submit such amendments to the people at the next general election.

Noteworthy gains to highway users have been secured in the field of size-and-weight limits, with the trend toward the recommendation of the American Association of State Highway Officials.

Indication of a better understanding is the increasing trend of legislatures to use special commissions and committees with power to recommend highway legislation based on their findings.

Oregon has authorized a study of for-hire motor vehicle legislation. Oklahoma will study all statutes relating to fees, licenses and special funds. West Virginia has provided for a highway safety study, and North Carolina, one on compulsory inspection laws.

Defense highways and all the problems national defense may bring to the roads of the nation, are receiving careful study by legislators.

•

Motor Taxes Total 13 Billion in Decade

FEDERAL and state taxes on motor fuels and lubricants, and on motor vehicles, accessories and tires yielded tax revenues of $13,143,000,000 since 1930, or an average of one and one-quarter billion dollars per year, according to the U. S. Bureau of Census.

Federal manufacturers' excise taxes for the last eight years, 1933-1940 inclusive, on gasoline, lubricants, motor vehicles, accessories, and tires have totaled $2,422,000,000, an average of $302,600,000 per year.

State collections of motor-fuel taxes during the last 11 years, 1930-1940 inclusive, have totaled $6,964,400,000, while receipts from motor-vehicle registration and driver licenses during the same period totaled $3,756,600,000. The combined total of these two categories of state automotive taxes was $10,721,000,000, an average of $974,633,000 a year.

How To Save Money On Your Tires

Don't guess at the mileage on your tires—know. Use the easy Keel Rotary Brander to keep accurate records of your tire purchases, retreads, re-caps, adjustments, etc. The Keel System is used by leading fleet operators, tire companies and state highway departments not only to save money on tires—but to reduce theft of tools, barrels, cases, batteries, etc. Write for complete details, prices.

FREE copy of the Keel Codes & Record Systems.

KEEL & CO.
PHILADELPHIA, PA.

Data on Inventory Control Methods

ADEQUATE control of materials is one important aspect of the demands of increasing industrial production. To meet production schedules, manufacturing companies must be sure to have the necessary materials and supplies at all times. Shortages can cause costly delays in operations, but excessive investment in inventories may be equally objectionable. Under present industrial activity many companies may find it necessary to reexamine and reappraise their inventory control practices.

A report *"Inventory Control Methods"* recently issued by the Policyholders Service Bureau of the Metropolitan Life Insurance Company offers helpful suggestions in this connection.

The report is based on data contributed by a number of industrial companies that are believed to have developed sound practices of controlling inventories of supplies, direct materials, and finished goods. It is not intended to cover the control of work-in-process inventories, nor does it apply to the merchandise control policies of retailers and wholesalers.

The report summarizes specific advantages of a formal system of inventory control, from the financial and operating points of view, and outlines six basic elements which are normally part of a formal system. Methods of classifying inventories and records employed for identification and accounting control purposes are described.

The method of evaluating inventories and of pricing stock withdrawals calls for consideration. The four commonly-used inventory pricing methods are described in detail, as are the various factors to consider in deciding upon the pricing policy to be used. There is special discussion of the relatively new "last-in, first-out" method. The question of determining time and amount for the replenishment of individual stock items is covered as well as the practices followed in this connection.

A section of the report discusses mechanical or visual unit control, employed as a means of minimizing the record keeping and expense involved in connection with inventory control activities. This should be of special interest to companies with relatively small inventory investments. Mention is also made of inventory adjustment procedures and of provisions for review of stocks to guard against obsolescence.

A copy of this report is available to executives who address the Bureau on their business stationery. Address Policyholders Service Bureau, Metropolitan Life Insurance Company, 1 Madison Avenue, New York.

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WITH UNITY'S
MATCHED SET LIGHTS
and
BE SAFE AND SAVE

The Complete Answer to Safe Night Driving

IN GOOD WEATHER
SPOTLIGHT LIGHTS WAY AT ANY SPEED—ALSO SPOTS ANYTHING

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UNITY FOG LIGHTS LIGHT THE WAY THRU FOG RAIN OR SNOW.

ALL MAZDA 30 WATT SEALED BULBS WILL FIT IN UNITY MATCHED SET LIGHTS

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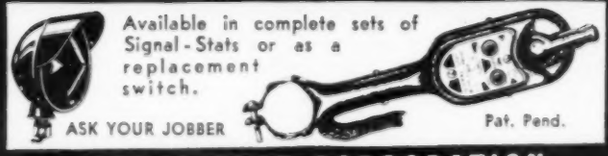

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ASK YOUR JOBBER

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LOW-COST SEAT COVERING
. . . made with RUBBER for FLEXIBILITY—
and ground LEATHER for DURABILITY
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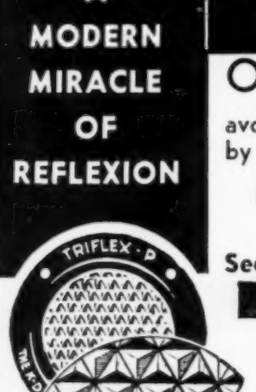
REFLEX REFLECTOR
(plastic lens)

A MODERN MIRACLE OF REFLEXION



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THE EASIEST AND CHEAPEST WAY TO REMOVE AND PREVENT RUST

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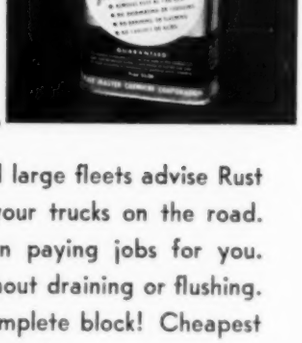
Just Pour It in
and Forget It.



Cooling system experts and large fleets advise Rust Master because it keeps your trucks on the road. No radiator troubles mean paying jobs for you. Just pour into radiator without draining or flushing. Rustproofs for one year complete block! Cheapest insurance for perfect operation!

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712 Beacon Street, Boston, Massachusetts

1940 Fleet Accident Statistics Ready

THE following accident rates have been determined by the National Safety Council's Statistical Bureau, from commercial vehicle accident records of more than 1,200 fleets, operating more than 85,000 vehicles for a total mileage exceeding 1,500,000,000 miles for the year 1940.

There were about 33,500 accidents or 2.18 accidents per 100,000 vehicle-miles. This is one accident for every 46,000 miles of operation.

The 1940 rates for general types of vehicles were as follows:

Type of Vehicle:	*Accident Rate:*
All vehicles	2.18
Passenger cars	1.45
Trucks	2.45
Buses and Taxicabs	2.48

Private Inter-City Trucks had a lower rate than the Passenger Car rate. Furthermore, there was wide variation between the rates for City and Inter-City Buses. Inter-City Buses had an accident rate of 1.47 per 100,000 vehicle-miles while City Buses had 5.90 accidents per 100,000 vehicle-miles and Taxicabs a rate of 3.77.

Those desiring a complete breakdown of the above accident statistics should get into touch with the National Safety Council, 20 N. Wacker Drive, Chicago, Ill.

●

These Are Yours for the Asking

"NUMBER One Job"—A 24-page booklet which tells in photographs and text the progress being made by the motor industry on its defense assignments.

"Singing Wheels"—A 23-minute sound motion picture dramatizing the services of motor trucks in the nation's commerce, business and national defense.

"What it Takes to Make an Auto"—A 32-page booklet which describes the planning and specialization required in motor car manufacturing.

"Automobile Facts & Figures"—Statistical yearbook, which crams between 96 pages, thousands of facts about the motor industry and its significance to the nation.

"Motor Truck Facts"—A statistical reference book on motor truck production and use. Contains 48 pages.

Copies of the above publications are obtainable by writing to the offices of the Automobile Manufacturers Association, New Center Building, Detroit, Mich. . . . Prints of the film, *"Singing Wheels"* are also available on request.

●

Many Are the Uses of Petroleum

IT WASN'T so many years ago that medicine-show men were touring the young United States, selling "Rock Oil" and "Indian Oil," to which they ascribed miraculous healing powers. Their stock in trade was crude oil, which now is really living up to all the "advertising" the medicine-men gave it.

A bit of processing, unknown in the days of the medicine-shows, is necessary, of course. Out of the processing is coming a number of curative pharmaceuticals and such which relieve pain and contribute to cures. Among them is novacaine, which makes dentists' chairs more comfortable; icthyol, a healing salve made from the crude oil obtained from certain shales; and formaldehyde, in itself an antiseptic, but

mixed with ammonia and other compounds, a drug with healing properties.

Glycol prevents radiators from freezing and helps in the manufacture of low-temperature dynamites. As glycol oleate it becomes an emulsifier which makes possible cosmetics, cold creams, brushless shaving creams, and lotions.

Of petroleum derivation are ethylene, propylene, and cyclopropane, mild anesthetics which can be used in cases where ether is inadvisable. From petroleum sources also come perfumes, astringents, theatre sprays, shampoos, and even liquid rouge.

Research workers find in petroleum hydrocarbons a field which is fertile and promises big harvests. In fact, it is the field of synthetic chemistry once limited largely to coal-tar products. Typical of what is happening is the production of glycerin from petroleum-refinery gases. Until recently glycerin was obtained only from animal and vegetable matter. Now it can be made from refinery gases by a process which chemists once said could not possibly work.

Since the process does work, and trihydric glycerin is available as proof, research workers are looking ahead to the polyhydric compounds—sugars and starches—and the world of foodstuffs. It begins to look as if service stations some day may change their signs to read: "Fuel for Man and Machine!"

●

Trucks Move Meat from Farm to City

ABOUT two-thirds of the cattle, calves and hogs received at the 65 major livestock markets in 1940 were "drive-ins," most of which were truck receipts, reports the U. S. Department of Agriculture.

"The proportion of drive-ins to total receipts has tended to increase since 1916, reflecting the extension of good roads and the expanding use of the motor truck," says the Agricultural Marketing Service Bulletin.

"For example driven-in hog receipts at 17 markets for which comparable data are available, accounted for only about 2 per cent of the total receipts in 1916. In 1940, about 75 per cent of the receipts of these 17 markets were driven-in. A similar trend is shown for other species at these markets."

Below is a table which shows how important motor truck transportation has become to 17 leading livestock markets in the past twenty-five years:

Drive-in Livestock Receipts and Per Cent of Total Receipts

	Cattle	*%*	*Calves*	*%*	*Hogs*	*%*
1916	163,621	1.3	60,821	4.1	579,102	1.7
1940	6,809,851	66.6	2,258,577	70.7	18,265,453	74.9

Other statistics regarding the part played by the motor truck industry in the nation's life and commerce are contained in *"Motor Truck Facts,"* a 48-page statistical reference book on motor truck production and use, obtainable free from Automobile Manufacturers Association, New Center Building, Detroit, Mich.

●

Rail-Inspired Laws "Serious Threat"

"MOTOR carriers are faced with rail-inspired restriction of free passage of state lines," says Kent T. Healy, Assistant Professor of Economics, Yale University. "Should this sort of restriction be widely imposed," warns Mr. Healy, "it will be a serious threat to the free intercourse between the states, which is so fundamental to the success of the Union."

TAXI FLEET CUTS TIRE COSTS

(Another Case-History from Our Files)

THIS TOOL DID THE TRICK!

PLENTY of tires in this fleet, you must admit. And plenty of headaches, due to unreported flats, the switching of tires and in some cases the "misappropriation" of spares. . . . Then they called in the Everhot man, who showed them how to brand all tires and how to use the Everhot Tire Cost System. . . . Now the fleet is enjoying satisfactory tire service at low cost.

YOU, too, can eliminate most tire problems that are caused by inadequate record-keeping. . . . We supply the brander and the cost-keeping system, and start you off on the right foot!

WRITE today for sample forms of the Everhot Tire Cost System, or better still, ask us to ship a brander on a money-back basis. . . . You can't lose!

EVERHOT MFG. CO., MAYWOOD, ILL.

Something New!

GUNK (Compound) "HYDRO-SEAL"

A Complete Decarbonizing Process in "Packaged Form"

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Including Heavy Steel Dunking Screen
(Value $1.50)

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READY TO USE—WORKS COLD OR HOT
"HYDRO-SEALED"
to last indefinitely

WHAT IT DOES

GUNK DECARBONIZES:
Carburetors
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Oil Coolers

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MFG. CHEMISTS. Malden, Mass.

Not in stock at my jobber . . . attached to my *business letterhead* is my check, or M. O. on the condition that you ship me a 40 lb., 5-gallon size, GUNK at dealer's net cost $7.20 ($8.00 west of the Mississippi) by FAST PREPAID AMERICAN EXPRESS . . . free of charge.

NAME .....
ADDRESS .....
CITY and STATE .....

"The Brake People"

BRAKE LINING · BRAKE SHOES · BRAKE PARTS

MILEY

NOW *all 3!*

Mileage . . . Stopping Power
and a Soft Pedal . . .

● Now you don't have to give up *stopping power* if you want mileage from your brake lining, nor must you give up *mileage* if you want a *soft, smooth pedal* action. By creating the densest brake lining manufactured (MILEY BLACK GOLD) and a new zinc wire, resin impregnated high friction lining (MILEY EBONITE) Miley has produced linings that individually or together will give all 3—long mileage, increased stopping power, and a smooth soft pedal action. Specify these safer linings for your next re-line job. They cost no more than ordinary linings.

Ask your Jobber about MILEY linings.

GOOD BRAKE LINING

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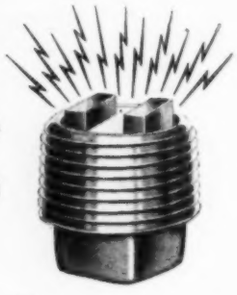
CHICAGO . . . U. S. A.

1056 W. ADAMS ST., CHICAGO, U. S. A.

STOP COSTLY WEAR

in Crank Case
Transmission
Rear Axle



MAGNETIC Drain Plugs are now saving money for hundreds of operators of automotive equipment. Used in place of ordinary plugs in the crank case, transmission and rear axle, Magnetic Plugs remove abrasive metal particles from the lubricant, thus preventing excessive wear to gears and bearings. Learn how little it would cost to equip your fleet. Write, Lisle Corporation, Box 1005, Clarinda, Iowa.

Magnetic
DRAIN PLUGS

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INCREASES OILINESS AND FILM STRENGTH—

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• It imparts detergency and anti-oxidation properties to Diesel as well as Gasoline engines.

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It holds tight because
THREAD PLAY IS ELIMINATED
with a resilient non-metallic locking collar

WHEN an Elastic Stop Nut is applied, thread play is automatically eliminated as soon as the end of the bolt presses against the locking collar which is built into the head of the nut. The load-carrying thread faces of nut and bolt are brought into contact under pressure.

As the bolt works its way through the collar, that pressure is increased. A positive grip is established which can not be loosened by vibration, shock or stress.

FOR a full explanation of the Elastic Stop principle, write for Catalog containing this and other data.

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1400 ROOMS each with Bath, Servidor, and Radio.

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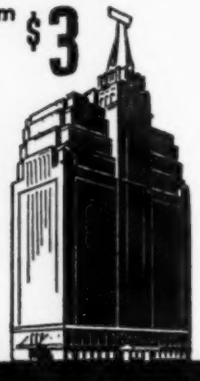

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600 ROOMS each with bath from $3.00 up
RADIOS IN EVERY ROOM
Lounge and Restaurant. Unrestricted Parking to 3 a.m.

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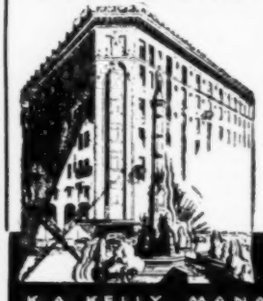

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Single ..... $2.50 up
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Hotel LAFAYETTE
BUFFALO, N.Y.

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NO "TRICKY TENSION"

NO DANGEROUS DRAG

NO IRON TO BREAK

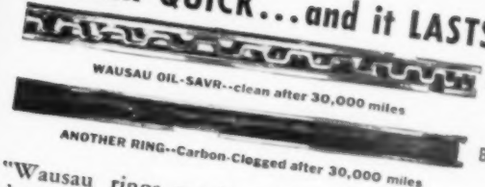
NON-CARBONIZING

NO SLOTS TO CLOG

COOLER, FREER RUNNING

OIL-SAVRS are packaged in individually engineered TAILORED SETS.

POWER QUICK...and it LASTS



"Wausau rings won't carbon-clog . . . won't drag!" So say surprised mechanics who have been used to harsh rings for handling oil pumpers. And it *is* hard to believe until you've seen for yourself that OIL-SAVRS run practically as clean and free after thousands of miles as on the first turn of the crankshaft. That *first* turn will surprise you, too . . . for OIL-SAVRS start *with the starter.* No tugging at the crank, no towing! *Quick* power . . . *lasting* power . . . you get BOTH because OIL-SAVRS run *free* . . . run *cool* . . . the only rings with safety-center-unit wall contact plus light-tension steel segments. When you re-ring your fleet units you *expect* oil economy and *hope* for restored performance. Get *complete* satisfaction, the easy, *safe* OIL-SAVR way. Ask your jobber.

WAUSAU MOTOR PARTS COMPANY

1600 Harrison Blvd. Wausau, Wisconsin

WAUSAU PUTS THE "INDIAN SIGN" ON OIL PUMPING!

HERE'S AMERICA'S BEST VALUE IN PISTON RINGS!
YOU SAID IT, BIG BOY, EVERY RING IS INDIVIDUALLY ENGINEERED!
SEALED Individually POWER Engineered
SEALED Individually POWER Engineered
AND EVERY RING IS TREATED WITH FRICTION-REDUCING, SCUFF-RESISTING GRANOSEAL!
THESE SETS SURE END OIL PUMPING IN A HURRY!
RING SET
SEALED POWER PISTON RINGS
SEALED POWER
Individually Engineered
PISTON RING SETS